








# TruVision NVR 10 User Manual

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# Chapter 1

## Product overview

### Installation environment

The TruVision NVR 10 is a versatile, user-friendly embedded network video recorder (NVR) allowing end-users to record up to 16 cameras with a maximum total input bandwidth of 20/40/80 Mbps for 4, 8, and 16 channels, while providing integration with the UTC portfolio of security solutions, and offering a seamless product experience within the TruVision brand.

Its embedded PoE ports allow for a true plug and play setup for TruVision IP cameras where the recorder automatically assigns the IP camera with an IP address and sets it up at default configurations. Adding cameras was never easier.

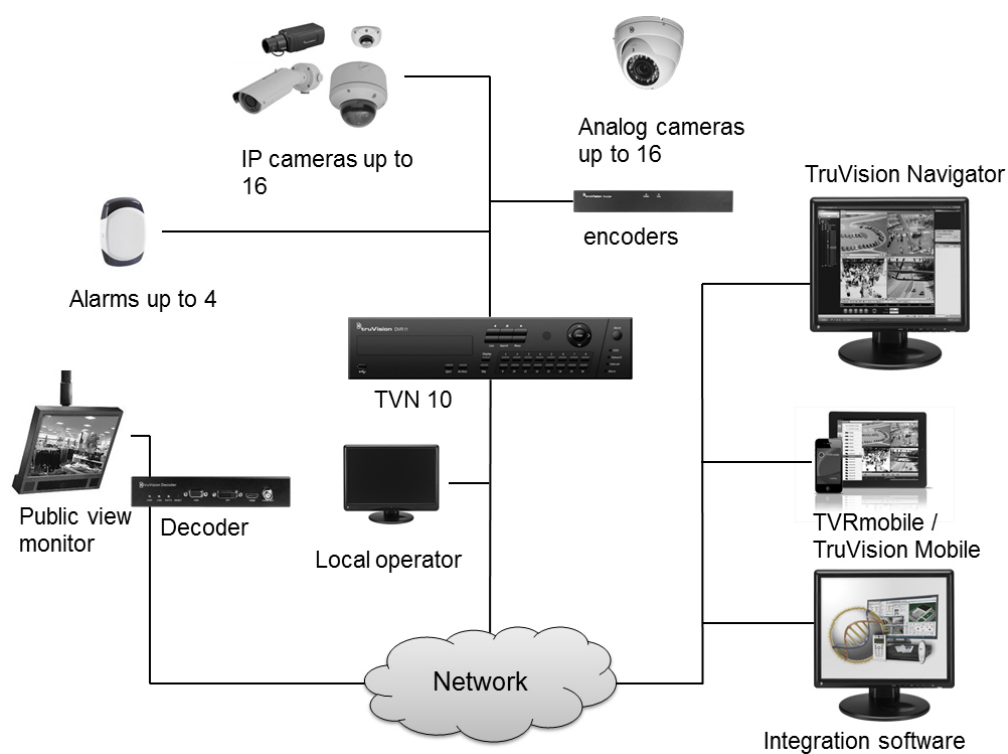
**Note:** The non-PoE version of the NVR is not available in the Americas.

Its dual streaming functionality allows the user to set up different settings for recording and streaming video in live view mode using main and substreams.

The TruVision NVR 10 can be configured through the OSD, web browser, and TruVision Navigator via the SDK.

It can fully integrate with the license-free TruVision Navigator software, which is ideal for most commercial applications. TVN 10's easy and intuitive-to-use web browser interface enables remote configuration and secure viewing, searching, and playing back of video from computers connected via the Internet.

**Figure 1: Example of a possible TVN 10 system configuration**



## Default settings to access the device

### Default user names and passwords

See Table 1 on page 7 for the list of default user names and passwords. Go to



Chapter 15 “User management” on page 113 for further information.

**Table 1: Default user names and passwords**

User	Description
Administrator	There can only be one administrator. The user name is admin. The name cannot be modified. The default password is 1234.
Operator	The default user name is “operator”. The default password is 4321.
Guest	The default user name is “guest”. The default password is Empty.

**Note:** The default passwords should be changed for security reasons.

## Default network settings

The default values for TVN 10 network settings are:

- IP address - 192.168.1.82
- Subnet mask - 255.255.255.0
- Gateway address - 192.168.1.1
- Ports:

When using the browser:

RTSP port: 554

HTTP port: 80

When using TruNav:

RTSP port: 554

Server/Client software port: 8000

Go to “Using the web browser” on page 118 for further information.

# Chapter 2

## Installation

This section describes how to install the TVN 10 unit.

### Installation environment

When installing your product, consider these factors:

- Ventilation
- Temperature
- Moisture
- Chassis load

**Ventilation:** Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. Ensure that the location planned for the installation of the unit is well ventilated.

**Temperature:** Consider the unit's operating temperature (-10 to +55 °C, 14 to 131 °F) and noncondensing humidity specifications (10 to 90%) before choosing an installation location. Extremes of heat or cold beyond the specified operating temperature limits may reduce the life expectancy of the NVR. Do not install the unit on top of other hot equipment. Leave 44 mm (1.75 in.) of space between rack-mounted TruVision NVR 10 units.

**Moisture:** Do not use the unit near water. Moisture can damage the internal components. To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.

**Chassis:** Equipment weighing less than 15.9 kg (35 lb.) may be placed on top of the unit.

# Unpacking the TVN 10 and its accessories

When you receive the product, check the package and contents for damage, and verify that all items are included. There is an item list included in the package. If any of the items are damaged or missing, please contact your local supplier.

Items shipped with the product include:

- IR (infrared) remote control
- Two AAA batteries for the remote control
- AC power cords
- USB mouse
- Brackets
- NVR
- CD with software and manuals
- *TruVision NVR 10 Quick Start Guide*
- *TruVision NVR 10 User Manual (on CD)*
- *TruVision Recorder Operator Guide (on CD)*

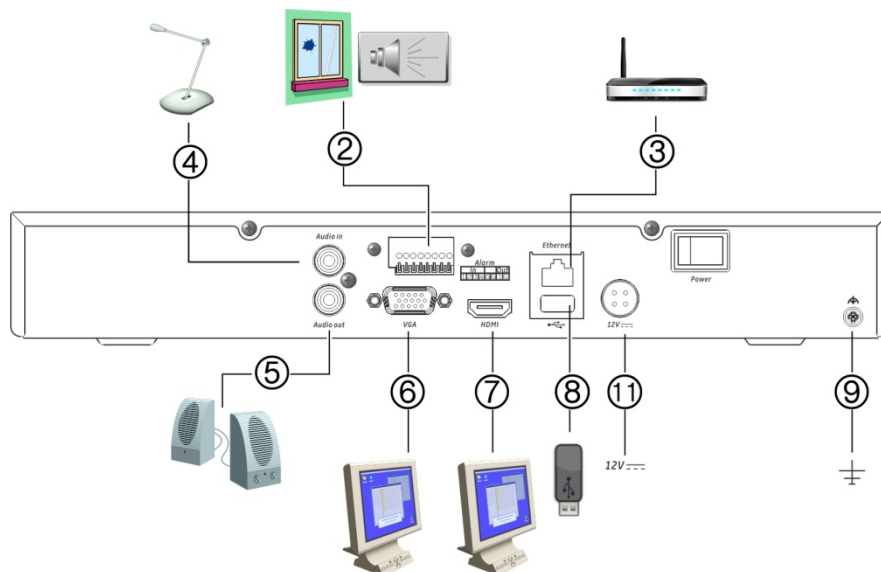
## Back panel

Figure 2 on page 10 shows the back panel connections and describes each connector on a typical TVN 10 network video recorder. Details may vary for specific models.

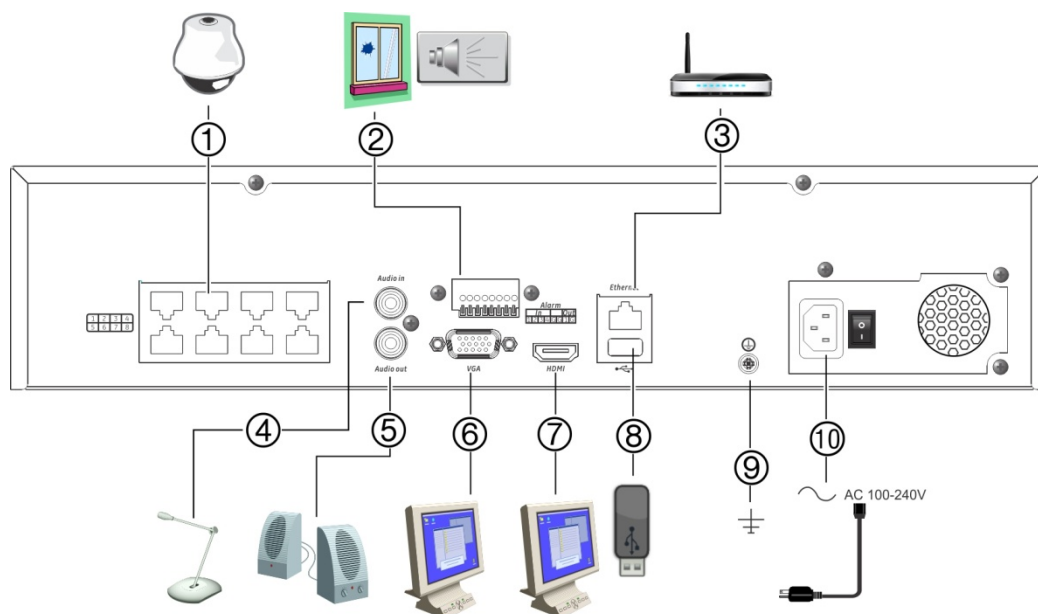
Before powering up the NVR, connect a main monitor for basic operation.

**Figure 2: Back panel connections**

**Four-channel model:**



**Eight-channel PoE model:**



1. Embedded PoE ports to connect up to eight IP cameras (depending on model).
2. Connect up to four alarm inputs and one alarm relay output.
3. Connect to a network.
4. Connect an RCA connector for audio input
5. Connect to speakers for audio output.
6. Connect to a VGA monitor.
7. Connect to an HDTV. The HDMI connection supports both digital audio and video.
8. Universal Serial Bus (USB 3.0) port. Connect to an additional device such as a USB mouse, CD/DVD burner or USB HDD.
9. Connect to ground.
10. Connect to a power cord.
11. Connect to a 12 VDC power supply.

# Monitor connections

Connect the unit to a monitor via an appropriate cable with the VGA/HDMI connector. See Figure 2 on page 10 for connecting a monitor to a TVN 10.

The TVN 10 supports at least 1024 × 768 / 60 Hz resolution. Adjust your monitor accordingly to this resolution.

# Audio inputs and output

The unit is equipped with one audio input and one audio output. Both the audio input and the audio outputs are line-level

Audio input	RCA jack, 315 mV, 40 kohms. Unbalanced
Audio output	RCA jack, 315mV, 600 ohms. Unbalanced

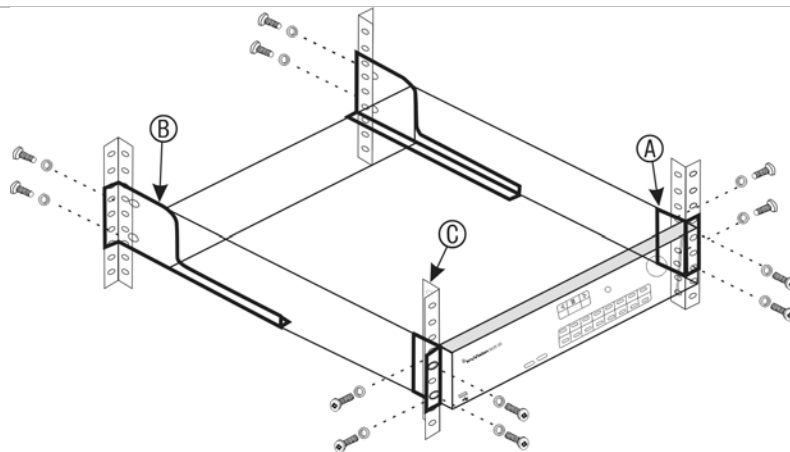
**Note:** Line-level audio requires amplification.

# Brackets

The TVNc models have a 1U desk-based chassis. They are not rack mountable.

The TVN models have a 1.5U desk-based chassis but can be easily rack-mountable with the purchase of the TVR-RK-1 rack-mount kit. Contact your local supplier to order the kit. See Figure 3 below.

**Figure 3: TVN 10 rack-mount installation**



## To install the racks:

1. Attach the two small front-rack mount ears (A) to the NVR. The screws are supplied.
2. Attach the two large rear support brackets (not supplied) to the rear rails (B).
3. Attach the NVR to the front rails (C). The screws are not supplied.

# Chapter 3

## Getting started

### Turning on and off the NVR

Before starting the power up process, connect the monitor to the VGA/HDMI interface. Otherwise, you will not be able to see the user interface and operate the device.

The NVR auto-detects the video mode (PAL or NTSC) on startup.

The TVN1004c, TVN1008, and TVN1016 equipped with an external 12 VDC. The TVN1004cS equipped with an external 48 VDC. The TVN1008S and TVN1016S equipped with a universal power supply that will auto-sense 100/240 V, 60/50 Hz.

**Note:** It is recommended that an uninterruptible power supply (UPS) is used in conjunction with the device.

#### To turn on the NVR:

Turn on the NVR using the power switch on the back panel. The power LED illuminates. A splash screen appears indicating that the NVR is starting up.

The Start Up Wizard window will appear.

#### To turn off the NVR:

1. In live view mode, right-click the mouse and click **Menu**. The main menu window appears.
2. Select the **Power Manager** icon.
3. In the Shutdown popup menu, select **Shutdown**. Click **Yes** to confirm shutdown.

#### To reboot the NVR:

1. In live view mode, right-click the mouse and click **Menu**. The main menu window appears.
2. Select the **Power Manager** icon.
3. In the Shutdown popup menu, select **Reboot**. Click **Yes** to confirm reboot.

# Using the setup wizard

The NVR has an express installation wizard that lets you easily configure basic NVR settings when first used. It configures all cameras simultaneously. The configuration can then be customized as required.

By default the setup wizard will start once the NVR has loaded. It will walk you through some of the more important settings of your NVR.

Any changes you make to a setup configuration page are saved when you finish the page and return to live view.

**Note:** If you want to set up the NVR with default settings only, click **Next** in each window until the end.

## To quickly set up the TVN 10:

1. Connect all the devices required to the back panel of the NVR. See “Back panel” on page 9.
2. Turn on the unit using the power switch on the back panel.
3. Select the preferred language for the system from the dropdown list and then click **Next**.
4. Enable or disable the option to start the wizard automatically when the NVR is turned on. Click **Next**.

### 5. Administrator configuration:

Navigate to the Admin Password edit box and click the edit box with the mouse, or press Enter on the front panel or remote control, to display the soft keyboard. Enter the default admin password, 1234.

**Note:** You must enter an admin password. To change the Admin password, check **New Admin password** and enter the new password and confirm it.

---

**Caution:** It is strongly recommended that you change the password of the administrator. Do not leave 1234 as the default password. Write it down in a safe place so that you do not forget it.

If you should forget the password to your NVR, contact your supplier with the serial and model numbers of your NVR to obtain a secure code to reset your NVR.

---

If you wish to limit the admin rights to only one computer, enter the MAC address of the user's computer. Otherwise leave the MAC address unchanged.

Click **Next**.

### 6. Time and date configuration:

Select the desired time zone, date format, system time, system date, and manual DST.

Wizard	
Time Zone	(GMT-08:00) Pacific Time(U.S. & Canada)
Date Format	MM-DD-YYYY
Time Format	24-hour
System Date	03-03-2014
System Time	12:14:49
Enable DST	<input type="checkbox"/>
From	Apr 1st Sun 2 :00
To	Oct last Sun 2 :00
DST Bias	60 Minutes

Apply

Previous Next Cancel

**Note:** The system time and date are visible in the window. However, they do not appear in recordings.

Click **Next** to move to the next page, or **Previous** to return to the previous page.

## 7. Network configuration:

Configure your network settings such as the NIC type, Enable or Disable DHCP, IP address, subnet mask, default gateway, and UPnP. Enter the preferred DNS server address as well as the alternate one to use.

Wizard	
NIC Type	10M/100M/1000M Self-adaptive
Enable DHCP	<input type="checkbox"/>
IPv4 Address	192.168.1.82
IPv4 Subnet Mask	255.255.255.0
IPv4 Default Gateway	192.168.1.1
Preferred DNS Serv...	
Alternate DNS Server	

UPnP Previous Next Exit

Click **Next** to move to the next page, or **Previous** to return to the previous page.

## 8. HDD management:

Configure your HDD settings as required.

You can group HDDs and assign cameras to a group. See “Setting up HDD groups” on page 58 for further information.

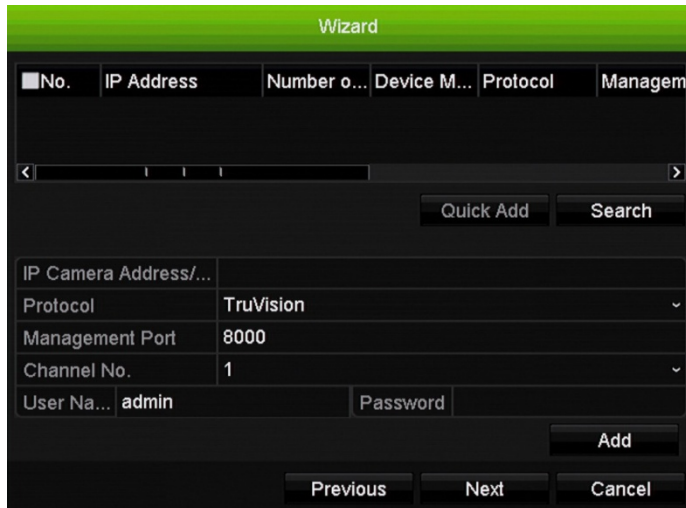
After configuring your HDD settings, click **Initialize** and **Next** to move to the next page, or **Previous** to return to the previous page.



## 9. Adding IP Camera:

Click **Search** to find any online cameras. Select the IP camera to be added, enter User name and Admin password, and then click the **Add** button. Click, **Next** to move to the Recording Configuration window.

**Note:** You do not need to search for PoE cameras. They are automatically recognized when plugged in.



## 10. Recording configuration:

Configure your recording settings as required. The settings apply to all cameras connected to the NVR.



Check the **Constant Recording** check box for the NVR to record continuously all day. If left unchecked, the NVR will not record.

Check the desired time lapse check box, **TL-Hi** or **TL-Lo**.

To record motion detection events, check **Event (Motion)**.

To record alarm events, check **Alarm**.

11. When all the required changes have been entered, a page appears showing all the settings.

Wizard

No.	Item	Status
1	Time Zone	(GMT+01:00) Amsterdam, Berlin, Rome, Paris
2	Date Format	MM-DD-YYYY
3	Time Format	24-hour
4	System Date	03-03-2014
5	System Time	21:18:14
6	Enable DST	N
7	NIC Type	10M/100M/1000M Self-adaptive
8	Enable DHCP	N
9	IPv4 Address	192.168.1.82
10	IPv4 Subnet Mask	255.255.255.0
11	IPv4 Default Gateway	192.168.1.1

Previous Finish Cancel

Click **Finish** to exit the Wizard. The NVR is now ready to use.

# Chapter 4

## Operating instructions

### Controlling the TVN 10

There are several ways to control the NVR:

- Front panel control
- Mouse control
- IR remote control
- TVK-800 keypad control (from TVK-800 firmware version 1.0.i)
- Web browser control (TruVision Navigator, TVRmobile)

You can use your preferred control method for any procedure, but in most cases we describe procedures using mouse terminology. Optional control methods are given only when they differ substantially from mouse control methods.

### Using the front panel

The function buttons on the front panel control can be used to operate most, but not all, of the main functions of the NVR. The LED indicators light up or flash to alert you of various conditions. The functions available can be limited by setting passwords. See Table 2 on page 18 and Table 3 on page 19 for more information.

Figure 4: Front panel

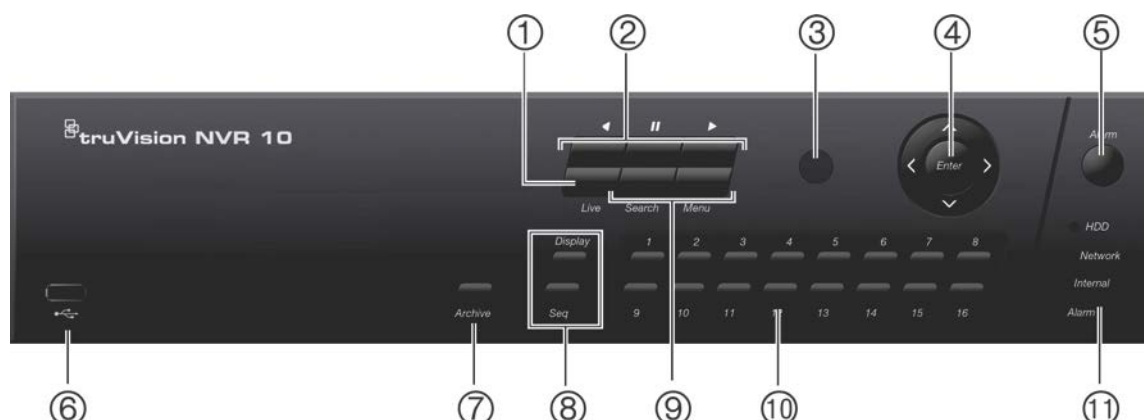









Table 2: Front panel elements

Name	Description
1. Live view button	Switch to live view mode.
2. Playback buttons	<p>See Table 3 on page 19 for a detailed description of all these buttons for different tasks.</p> <p><b>Reverse:</b> In live view mode, use to play back the earliest video. In playback mode, playback a camera in the reverse direction.</p> <p><b>Pause:</b> In live view mode, freeze the last image of the live display for all active cameras displayed. In playback mode, stop playback.</p> <p><b>Play:</b> In live view mode, play 24-hour playback of the currently selected camera. In playback mode, play back a camera in the forward direction. In search mode, play back a selected video or view a snapshot.</p>
3. IR receiver	<p>Receiver for IR remote.</p> <p>To connect the remote control to the NVR, press the Device button, enter the device address, and press Enter. See “Using the IR remote control” on page 21 for more information.</p>
4. Direction	The DIRECTION buttons are used to navigate between different fields and items in menus. In PTZ mode, it can control the movement of the PTZ camera.
Enter button	<p>The ENTER button is used to confirm selection in any of the menu modes.</p> <p>See Table 3 on page 19 for a detailed description of these buttons by different tasks.</p>
5. Alarm button	<p>Use to manually acknowledge an alarm.</p> <p>In live view mode, contact the alarm recipient when an alarm/event is triggered.</p>
6. USB Interfaces	Universal Serial Bus (USB) ports for additional devices such as a USB mouse, CD/DVD burner, and USB Hard Disk Drive (HDD).
7. Archive button	Press once to enter quick archive mode. Press twice to start archiving. If the flash drive has an LED, it will flash during archiving.
8. Display buttons	See Table 3 on page 19 for a detailed description of all these

Name	Description
	<p>buttons for different tasks.</p> <p><b>Display:</b> In multiview mode, toggle through the various multiviews (full, quad, 1+5, 1+7, 9, and 16).</p> <p>In HDD information mode and user management mode delete a selected item. In PTZ mode, delete a selected key point. In Log Search mode, display the details of a log file in Log Search result.</p> <p><b>Seq:</b> In Live View mode, start/stop sequencing cameras on the current monitor.</p>
9. Menu and Search buttons	<p><b>Menu:</b> Enter/exit the main menu.</p> <p><b>Search:</b> In live view, enter the advanced search menu.</p>
10. Numeric buttons	<p>Switch between different cameras in live, PTZ control or playback modes.</p> <p>Enter numerals 0 to 9 when using the virtual keyboard.</p>
11. Status LEDs	<p><b>HDD:</b> A steady GREEN light indicates that the NVR is accessing the HDD in read or write operation. A steady RED light indicates HDD failure.</p> <p><b>Network:</b> A steady GREEN light indicates that the NVR is currently connected to a network. No light indicates that the NVR is not connected to any network.</p> <p><b>Internal:</b> A steady GREEN light indicates that the NVR is currently recording video/audio. A steady RED light indicates internal health failure.</p> <p><b>Alarm:</b> A steady RED light indicates that there is a sensor Alarm In. A steady GREEN light indicates no alarm.</p>

**Table 3: Front panel button functions by task**

Task	Button	Button function
Live view mode	Direction	Press to cycle through channels.
	Enter	Press to show the PTZ control toolbar.
	 Reverse	Press to play the earliest video file of the current camera (upper-left video tile if in multiview mode).
	 Pause	Press to freeze the last image of the live display for all active cameras displayed.
	 Play	Press to play 24-hour playback of the current camera (upper-left video tile if in multiview mode).
	Live	Press to switch to live view mode.
	Seq	Press to start/stop sequencing cameras on the current monitor. Hold the Seq button for three seconds to start and stop sequencing.
	Menu	Press to enter the main menu.
Playback mode	Direction	The left and right buttons are used to speed up and slow down recorded video. The up and down buttons are used to jump recorded video forwards or backwards by 30 s.

Task	Button	Button function
	Enter	Press the button to pause the video. Press again to restart the video.  In single-frame Playback mode, press to advance the video by a single frame.
	 Reverse	Press to play back a camera in reverse direction.  In Picture Playback mode, view pictures in reverse direction.
	 Pause	In Playback mode, stop playback.
	 Play	In Playback mode, play back a camera in the forward direction.
Pause mode	Direction	The left and right buttons are used to jump recorded video forwards or backwards by one frame. The up and down buttons are used to jump recorded video forwards or backwards by one second.
PTZ control mode	Direction	Press to control the movement of the PTZ camera.
	Zoom +/-	Press to zoom in and out.
	Preset	Press Preset and a numeric button to call the specified preset.
	Tour	Press Tour and a numeric button to call the specified shadow tour.
	 Play	Press to do an auto tour.
	Display	Press to delete a selected key point from the PTZ Setting > More Settings> Tour > Key Point list.
Menu navigation	Direction	Press to navigate between different fields and items in menus.
	Menu	Enter/exit the main menu.
	Enter	Press to confirm the selection in any of the menu modes.
	Seq	Press to switch between different tabs in a menu window.

**Note:** The non-PoE version of the NVR is not available in the Americas.

## Using the mouse

The USB mouse provided with the NVR can be used to operate all the functions of the NVR, unlike the front panel which has limited functionality. The USB mouse lets you navigate and make changes to settings in the user interface.

Connect the mouse to the NVR by plugging the mouse USB connector into the USB port on the front or back panel. The mouse is immediately operational and the pointer should appear.

**Note:** Use a USB 1.1 or higher mouse.

Move the pointer to a command, option, or button on a window. Click the left mouse button to enter or confirm a selection.

You can purchase a spare mouse by ordering part number TVR-MOUSE-1.

See Table 4 below for a description of the mouse buttons.

**Table 4: Mouse buttons**

Item	Description	
Left button	Single-Click	<b>Live view:</b> Select a camera to display the quick access toolbar (see “Accessing frequently used commands” on page 75). <b>Menu:</b> Select a component of a menu, such as a button or an input field. This is similar to pressing the Enter button on the remote/front panel controls.
	Double-Click	<b>Live view:</b> Switch between single screen and multi-screen mode in live/ playback mode.
	Click and Drag	<b>Live view:</b> Drag channel/time bar. <b>PTZ control:</b> Adjust pan, tilt and zoom. <b>Tamperproof, privacy masking and motion detection functions:</b> Select the target area. <b>Digital zoom-in:</b> Drag and select target area.
Right button	Single-Click	<b>Live view:</b> Display menu. <b>Menu:</b> Exit the current menu and return to higher level.
	Scroll Up	<b>Live view:</b> Return to the previous window. <b>Menu:</b> Move the selection to the previous item.
Scroll-wheel	Scroll Down	<b>Live view:</b> Move to the next window. <b>Menu:</b> Move the selection to the next item.

## Using the IR remote control

The NVR is supplied with an infra red (IR) remote control unit. Like the mouse, it can be used to operate all of the main functions of the NVR.

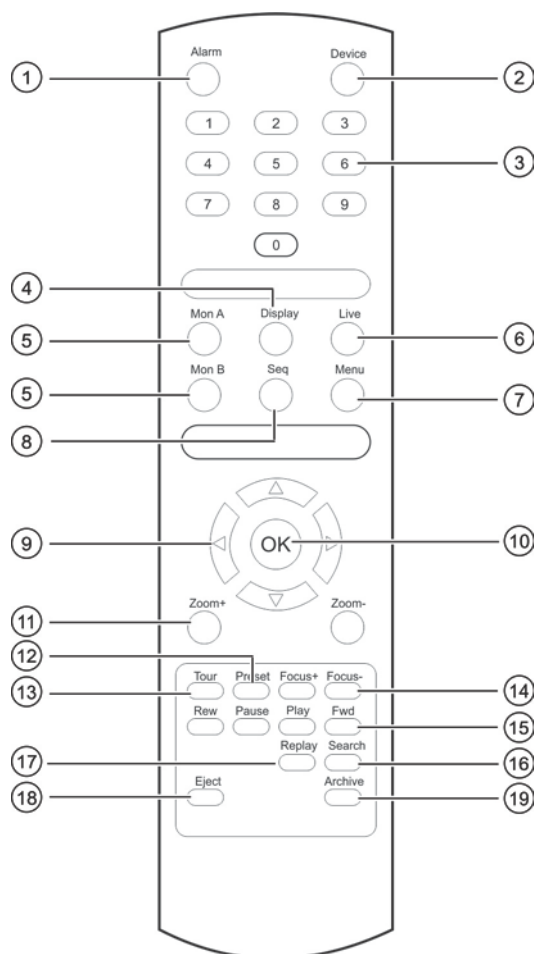
The IR remote control can be programmed with a unique device ID address so that the controller will only be able to communicate with NVRs with that address. No programming is necessary if using a single NVR.

The device ID address only applies when using a remote control and not when using a keypad.

You can purchase a remote control by ordering part number TVR-REMOTE-1 IR Remote Control.

**Note:** The IR remote control is a common accessory for multiple TruVision recorders. Consequently not all functionality listed for the remote control is available in the TVN 10.

**Figure 5: IR remote control**



Item	Description
1. Alarm	Acknowledge an alarm.
2. Device	Enable/disable the IR remote control to control the TVN 10.
3. Numeric buttons	Select a camera, and enter a number in a menu option.
4. Display	Switch between the different multiviews.
5. Mon A and Mon B	Switch between monitors A and B.
6. Live	Return to live view mode.
7. Menu	Activate the main menu.
8. Seq	Start /stop sequencing.
9. <, >, ^, v	In Menu mode: Use left or right arrow buttons to select and up or down arrow buttons to edit entry. In PTZ mode: Use to control PTZ. In Playback mode: Use to control playback speed.
10. OK	Confirm selection.
11. Zoom + and -	Use to control zoom of camera lens.
12. Preset	Enter preprogrammed three-digit code to call up a preset.
13. Tour	Enter preprogrammed one-digit code to call up a preset tour.



Item	Description
14. Focus + and -	Use to control focus of camera lens.
15. Playback control	Use to control playback (Rewind, Pause, Play, and Fast Forward).
16. Search	Open the Search menu.
17. Replay	Replay the selected file from the beginning.
18. Eject	Eject the CD or DVD disk.
19. Archive	Press once to enter quick archive mode. Press twice to start archiving.

Aim the remote control at the IR receiver located at the front of the unit to test operation.

#### To connect the remote control to the TVN 10:

1. Press the **Menu** button on the front panel or right-click the mouse and select the **Menu** button. The main menu window appears.
2. Click **Display Mode Settings > Monitor**.
3. Check the device address value. The default value is 255. This device address is valid for all IR controls.
4. On the remote control, press the **Device** button.
5. Enter the device address value. It must be the same as that on the TVN 10.
6. Press **OK** on the remote control.

#### To place batteries into the IR remote control:

1. Remove the battery cover.
2. Insert the batteries. Make sure that the positive (+) and negative (–) poles are correctly placed.
3. Replace the battery cover.

#### Troubleshooting the remote control:

If the IR remote control is not functioning properly, perform the following tests:

- Check the battery polarity.
- Check the remaining charge in the batteries.
- Check that the IR remote control sensor is not masked.

If the problem still exists, please contact your administrator.

## Using a keypad

Please refer to the user manual of the TVK-800 keypad for instructions on connecting and using the keypad with the NVR.

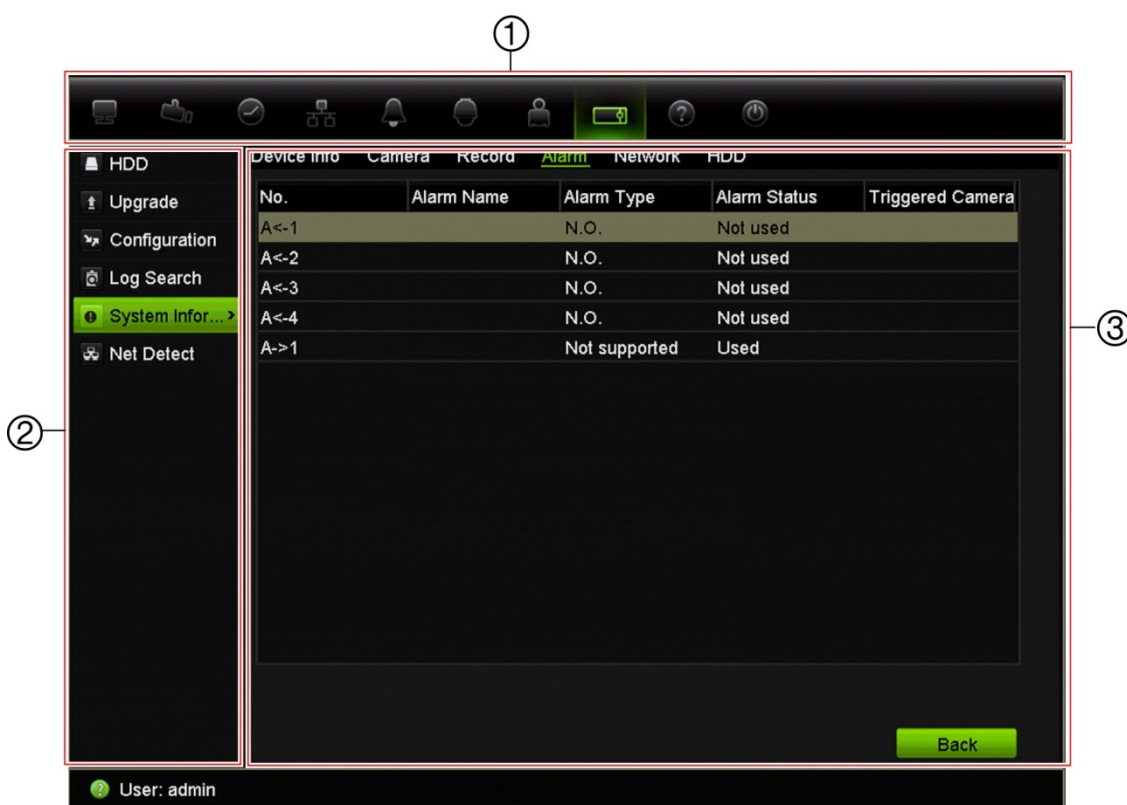
# Menu overview

The TVN 10 has an icon-driven menu structure that allows you to configure the unit's parameters. Each command icon displays a window that lets you edit a group of settings. Most menus are available only to system administrators.

The window is divided into three sections. The currently selected command icon and submenu item are highlighted in green. See Figure 6 below.

You must be in live view mode to access the main menu.






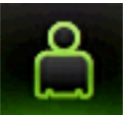



Figure 6: Menu structure



- Menu toolbar:** Setup options available for the selected menu function. Move the mouse over a command icon and click to select it. See Table 5 below for a description of the icons.
- Submenu panel:** Submenus for the selected menu function are displayed. Click an item to select it.
- Setup menu:** All the details for the selected submenu are displayed. Click a field to make changes.

Table 5: Description of the menu toolbar icons

Icon	Name	Description
	Display mode settings	Configure display settings including system date and time, audio output, device name, dwell time, language, and display formats. See "Configuring live view" on page 77 and "Holiday schedules" on page 32.

Icon	Name	Description
	Camera management	Configure camera settings including OSD display, motion detection, privacy masking, video image adjustments, video loss, add/edit camera, tamper-proof, restricted access camera, and copy settings to other cameras. See Chapter 9 “Camera settings” on page 63.
	Video schedule	Configure recording settings including recording schedules, record quality, auto delete mode, recording mode, manual record, and overwrite. See Chapter 5 “Recording settings” on page 27.
	Network settings	Configure standard network settings including IP address, email notifications, DDNS setup, and advanced network settings. See Chapter 7 “Network settings” on page 46.
	Alarm settings	Configure alarm settings including alarm input, relay output, buzzer time, and remote alert. See Chapter 6 “Alarm settings” on page 37.
	PTZ settings	Configure PTZ settings. See Chapter 11 “Controlling a PTZ camera” on page 84.
	User management	Configure users, passwords, and access privileges. See Chapter 15 “User management” on page 113.
	System settings	Export/import configuration file, configure system settings, firmware upgrade, hard drive settings, and boot log. See Chapter 8 “Storage management” on page 57 and Chapter 14 “NVR management” on page 108.
	Help information	Provides reference information to the various toolbars, menus, and keys within the interface.
	Power manager	Provides access to logout, reboot and shutdown options. See “Turning on and off the NVR” on page 12.

### To access the main menu:

1. In live view press the **Menu** button on the remote control or front panel.

- Or -

Right-click the mouse and select **Menu** from the pop-up menu.

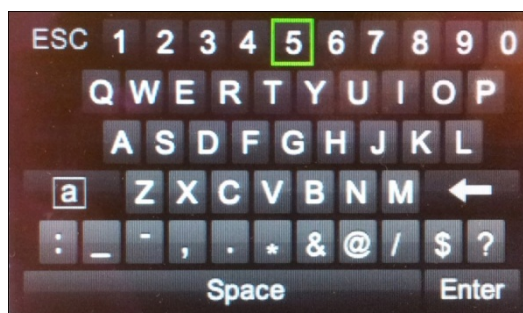
The main menu window appears. The Display window appears by default.

2. Click the required menu icon to display its submenu options. Modify the configuration parameters as required.
3. Click **Apply** to save the settings.
4. Click **Back** to return to live view.








## Using the soft keyboard

A keyboard will appear on-screen when you need to enter characters in a screen option. Click a key to input that character.

Figure 7: The soft keyboard



Description of the keys in the soft keyboard:

	Switch to lowercase/uppercase
	Space
	Exit the soft keyboard
	Alphanumeric characters
	Backspace
	Punctuation
	Confirm selection

## Exiting the main menu

Press the **Menu** button on the front panel to exit the current menu window and return to live view or click **Back** in a main menu.

# Chapter 5

## Recording settings

This chapter provides instructions on how to define the recording settings of your NVR. This chapter covers how you can configure your initial recording settings, schedule recordings, protect your recorded files, and set up your HDD for redundancy.

Enter menu mode by pressing the Menu button on the front panel or use the mouse menu to select Menu (see “Controlling live view mode” on page 73). See “Menu overview” on page 24 for a list of the menu icons.

### Configuring recording settings

Before you can set up your NVR to begin recording, you must first configure general recording settings for the IP cameras.

Ensure that the HDD has been installed and initialized before configuring the recording settings. See

Chapter 8 “Storage management” on page 57 for more information.

### To configure recording settings:

1. From the menu toolbar, click **Video Schedule > Encoding > Record**.



2. Select the camera you want to configure.
3. Configure the following recording settings (options available depend on the camera model):
  - **Encoding Parameters:** Select one of the stream types: Mainstream (TL-Hi) (default), Mainstream (TL-Lo), Mainstream (Event), Mainstream (Alarm), or Substream.
  - **Stream Type:** Select the type of stream to record: Video.
  - **Resolution:** Select the desired resolution of the recording:

Resolution	PAL	NTSC
5 MPX	2560 × 1920	2560 × 1920
WQXGA (3 MPX)	2048 × 1536	2048 × 1536
Full HD (1080P)	1920 × 1080	1920 × 1080
UXGA (2 MPX)	1600 × 1200	1600 × 1200
SXGA	1600 × 912	1600 × 912
960P (1.3 MPX)	1280 × 960	1280 × 960
HD (720P)	1280 × 720	1280 × 720
SVGA	800 × 600	800 × 600
D1	720 × 576	720 × 480
4CIF	704×576	704 × 480
VGA	640 × 480	640 × 480
DCIF	528 × 384	528 × 320

2CIF	704 × 288	704 × 240
CIF	352 × 288	352 × 240
QCIF	176 × 144	176 × 120

- **Bitrate Type:** Select Constant or Variable (default).
- **Video Quality:** Select the quality at which to record. Default is “Medium”. If “Constant” was selected as the bit rate type, this option is unavailable.
- **Frame rate:** Select the required recording frame rate (fps): Full frame (default), 22, 20, 18, 16, 15, 12, 10, 8, 6, 4, 2, or 1.
- **Max Bitrate Mode:** Select the general default or customized option.
- **Max Bitrate (kbps):** If the customized maximum bit rate mode was selected, enter the value here. It is calculated from the frame rate and time required.
- **Pre-record:** This is the time the camera starts recording before the event. Select the time in seconds to start pre-recording before the scheduled time or event: 0, 5, 10, 15, 20, 25, 30, or Maximum.

The maximum pre-recording times available depend on the constant bit rate.  
See

Appendix D “Default menu settings” on page 135 for more information.

- **Post-record:** This is the time the camera continues to record after the event. Select the time in seconds to stop post-recording after the scheduled time or event.
- **Expired Time (day):** Select the number of days after which recorded video from the specified camera is permanently deleted from the HDD. A “day” is defined as the 24-hour period from when the auto delete mode (ADM) was set.

The maximum number of days that can be set is 60. However, the actual number of days permitted depends on the HDD capacity. If the value is set to ‘0’, the option is disabled.

- **Record Audio:** Select **Yes** to record sound with the images.  
**Note:** This option is only available if the camera supports audio.

4. Click **Apply** to save the settings.
5. Click the **Capture** tab and configure the settings for captured images, such as resolution. Click **Apply** to save the settings.
6. Click **Back** to return to live view, or continue configuring the NVR settings.

## Configuring overwrite

You can select how the NVR responds when the HDDs become full and there is no longer sufficient space to save new data.

**To configure for overwrite when the HDDs are full:**

1. From the menu toolbar, click **Video Schedule > More Settings**.
2. Under **Overwrite**, select **Yes**.

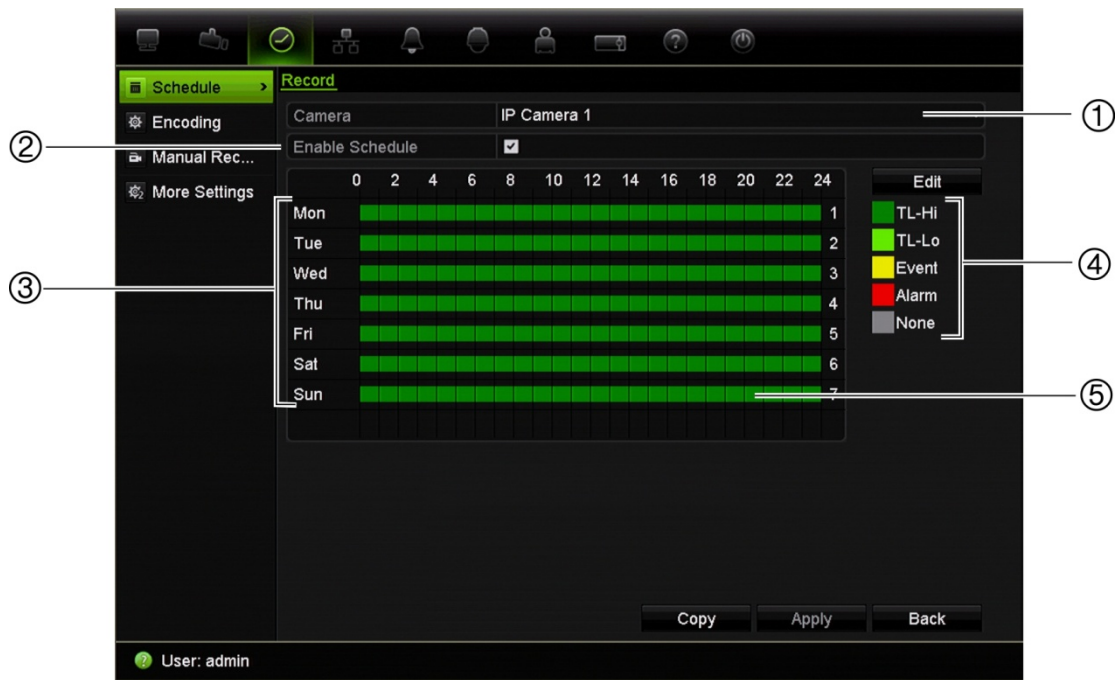
## Configuring recording schedules

Configuring a recording schedule lets you specify when the NVR records video and under what circumstances. Each camera can be configured to have its own recording schedule.

The schedules are visually presented on a map for easy reference. See Figure 8 on page 31 for an example.



**Figure 8: Description of the Schedule window**



1. **Camera.** Select a camera.
2. **Schedule time.** Represents the 24-hour cycle during which a schedule is selected.
3. **Schedule day.** There are eight days to select: Sunday (Sun), Monday (Mon), Tuesday (Tue), Wednesday (Wed), Thursday (Thu), Friday (Fri), Saturday (Sat), and Holiday (if enabled).
4. **Recording type.** There are five recording types to select, which are color-coded:
  - TL Time lapse (Green squares): A record of a specific day. Each green square in the timeline represents an hour in the 24-hour period.
  - TL-Hi (Dark green): High-quality time lapse. A high-quality video recording.
  - TL-Low (Bright green): Low quality time lapse. Records low quality video. This could be used, for example, for night recordings when few events or alarms are expected. Saving the video in low quality helps save resources on the HDD.
  - Event (Yellow): Records only events, such as motion detection.
  - Alarm (Red): Records only alarms.
  - None (Grey): No recording is made during this period.
5. **Timeline.** There is a 24-hour time line for each day. Up to eight recording periods can be scheduled during the 24-hour period.

## Daily schedules

### To set up a daily recording schedule:

1. From the menu toolbar, click **Video Schedule > Schedule**.
2. Select a camera.
3. Check the **Enable Schedule** box.

- Click **Edit**. The following window is displayed:

Edit				
Weekday		Mon		
All Day	<input checked="" type="checkbox"/>		Type	TL-Hi
Start/End Time	00:00-00:00		Type	TL-Hi
Start/End Time	00:00-00:00		Type	TL-Hi
Start/End Time	00:00-00:00		Type	TL-Hi
Start/End Time	00:00-00:00		Type	TL-Hi
Start/End Time	00:00-00:00		Type	TL-Hi
Start/End Time	00:00-00:00		Type	TL-Hi
Start/End Time	00:00-00:00		Type	TL-Hi

Copy Apply OK Cancel

- Select the day of the week for which you want to set up the schedule.  
You can define a schedule for each day of the week.
- Set the start and end time for recording (by default, **All Day** is selected).  
Define a time period by entering a start (left column) and end (right column) time.  
You can schedule up to eight time periods. Click **All Day** to record all day.  
**Note:** Time periods defined cannot overlap.
- Select a recording type.  
This setting instructs the NVR to begin recording. The recording type can be based on time and triggered by motion detection and/or an alarm. If set to TimeLapse (TL-Hi or TL-Lo), the NVR records continuously.
- Click **Apply** to save settings.
- Repeat steps 5 to 8 for other days of the week, or copy the schedule settings to another day.  
To copy the current schedule settings to another day of the week, click **Copy**.  
Select the day of the week to which to copy the schedule and click **OK** to save changes and return to the Edit window.
- Repeat steps 2 to 9 for other cameras.
- Click **Apply** to save the settings and then **OK** to return to the schedule window.

## Holiday schedules

As well as being able to schedule when recordings occur during the week, you can also schedule them for specific holidays in the year such as the first of January, or the second Wednesday of every month. You can schedule up to 32 holiday periods.

A holiday period can be scheduled for a particular day or as a block of days.

**To set up a holiday recording schedule:**

1. From the menu toolbar, click **Display Mode Settings > Holiday**.
2. Select a holiday period from the list and click **Edit** to modify the settings. The Edit pop-up window appears.



The screenshot shows a dark-themed 'Edit' window. At the top is a green header bar with the word 'Edit' in white. Below the header is a table with the following rows:

Holiday Name	Holiday1		
Enable	<input type="checkbox"/>		
Mode	By Month ▾		
Start Date	Jan ▾	1 ▾	▾
End Date	Jan ▾	1 ▾	▾

Below the table is a large empty dark area. At the bottom of the window are three buttons: 'Apply' (dark), 'OK' (dark), and 'Cancel' (green with white text).

3. Enter the name of the holiday period and click **Enable**.
4. Select whether the holiday period will be categorized by date, week, or month and then enter the start and end dates.
5. Click **Apply** to save the settings and then **OK** to return to the Edit window.
6. Repeat steps 2 to 5 for other holiday periods.
7. Click **Back** to return to live view, or continue configuring the NVR settings.

## Manual recording

The NVR lets you manually record video during live view. This can be useful if you know that the NVR is not currently recording and you see something of interest on a camera window that should be recorded.

Once a manual recording is started, the recording continues until it is manually stopped. If an alarm occurs during a manual recording, the alarm recording has priority over the manual recording. If a scheduled recording is already in progress when a manual recording is started, it continues to record as scheduled.

You can check to see if a camera is recording manually by looking at the icon on the quick access toolbar. The icon is red when manually recording. Default is off.

There are two ways to start and stop a manual recording:

- **Use the quick access toolbar**

You can start/stop manual recording for each camera individually. Position the cursor over a camera image and left-click the mouse to display the quick access toolbar. Click the manual record icon to start or stop manual recording. The icon is red when recording.

- **Use the configuration menu**

This option lets you select more than one camera at a time. Go to **Video Schedule > Manual Record** to access the manual recording menu and click the button of the cameras to start or stop manual recording.



## Motion detection schedules

For IP cameras, you can configure from the NVR the schedule when the camera can be triggered by motion. However, you need to configure the area of the video display sensitive to motion from the camera itself.

For information on scheduling motion detections, see “Setting up motion detection” on page 38.

## External alarm schedules

The NVR can be scheduled to record when an alarm is triggered by an external alarm device such as a PIR detector or dry contacts. For information on scheduling external alarms, see “Triggering or clearing alarm outputs manually” on page 43.

## Protecting recorded files

There are two methods to prevent recorded files from being inadvertently overwritten or deleted off the HDD. We highly recommend that important recorded events be protected from deletion. Recorded files can either be *locked* or the HDD that the files reside on can be set to *read only*.

## Locking and unlocking recorded files

Lock files to protect them against being overwritten or deleted.

### To lock or unlock a recorded file:

1. In live view enter the video search window by pressing the **Search** button on the front panel or remote control, and then enter **Advanced Search**.

— Or —

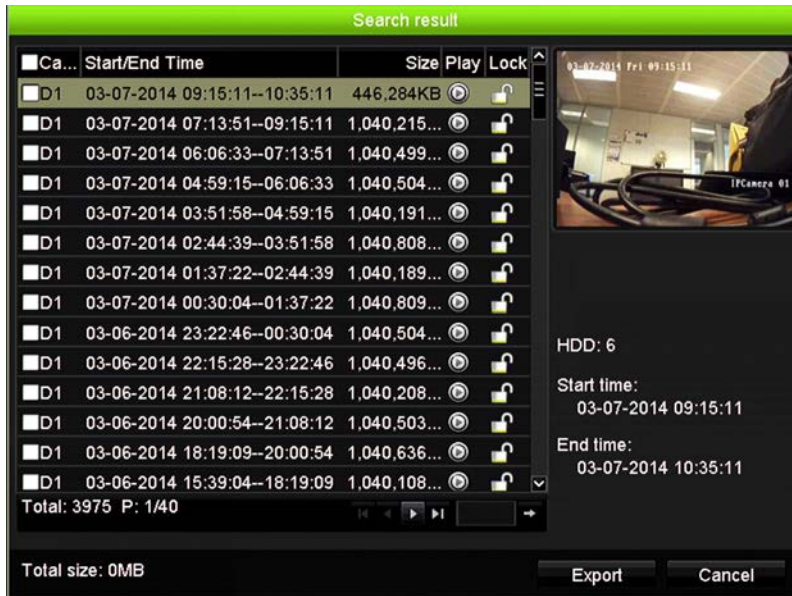
In live view right-click the mouse to display the pop-up menu and select **Advanced Search**.

The Search window appears.



2. Search for the desired recording by entering the search parameters, which include the camera number, record type (All, Continuous, Motion, Alarm, or Manual), file type (, All, Unlocked, or Locked), and the start time and end times.
3. Click **Search**.

A list of recordings, similar to the figure below, matching the search parameters is displayed.



## Setting the HDD to read-only

When you set an HDD to *read-only*, recorded video files cannot be written to the HDD. If multiple HDDs are used, the NVR automatically records to the next HDD not set to *read-only*

### To set an HDD to read-only:

1. From the menu toolbar, click **System Settings > Hard Disk**.
2. Select the HDD you want to set to read-only.
3. Click the **Edit** button for the selected HDD.
4. Check **Read only**.
5. Click **Apply** to save the settings. The HDD is now read-only.

**Note:** In order to enable recordings on that particular HDD again, you must set the HDD status back to R/W (Read/ Write). Make sure the HDD storage mode is "Group" before setting the HDD to read-only.

6. Click **Back** to return to live view, or continue configuring the NVR settings.

# Chapter 6

## Alarm settings

This chapter describes setting up how the system will respond when an alarm is triggered.

### Description of alarm notification types

When setting up the rules for alarm detection, you can specify how you want the NVR to notify you about an alarm or event. You can select more than one notification type. Not all notifications types are available for all types of alarms.

The alarm notification types are:

- **Full Screen Monitoring:** When an alarm is triggered, the monitor (VGA or HDMI) displays an image in live view mode. For alarms that are triggered simultaneously, images display one at a time every 10 seconds (default dwell time). You can set a different dwell time using the Dwell Time setting under the Display Settings>Layout window. When the alarm stops, cycling of the images stops and you return to live view mode. This alarm option must be selected for each channel where it is required.
- **Audible Warning:** Triggers an audible *beep* when a notification or alarm is detected by the system or a camera.
- **Notify Alarm Recipient:** Sends a signal to TruVision Navigator or other software applications when an alarm or notification is detected.
- **Send Email:** Sends an email when an alarm or notification is detected. See “Email” on page 50 for information on how to configure the NVR to send an email.
- **Trigger Alarm Output:** Triggers an alarm output or multiple alarm outputs when a notification is detected for an external alarm. See “Setting up external alarms” on page 41 for information on configuring an alarm output.

### Modifying the warning buzzer time

When an alarm is triggered by the system or a camera, the NVR can be set up to respond with a warning buzzer. You can modify the time during which the warning



buzzer sounds for both system and camera alarms. Select **Alarm Settings > Advanced Settings** and select a buzzer time limit for the system and camera alarms. Default is Constant.

## Setting up motion detection

Motion detection is one of the most important features of a NVR. The NVR can be set up to trigger an alarm if it detects motion and to record it. You can then search these recorded motion activities for specific incidents. If enabled, motion detection recording can help increase the number of days your NVR can record.

You can mask out any areas of motion on an IP camera display that you do not want to trigger a recording such as a flag on a pole or a moving tree. You can also select the level of sensitivity to motion.

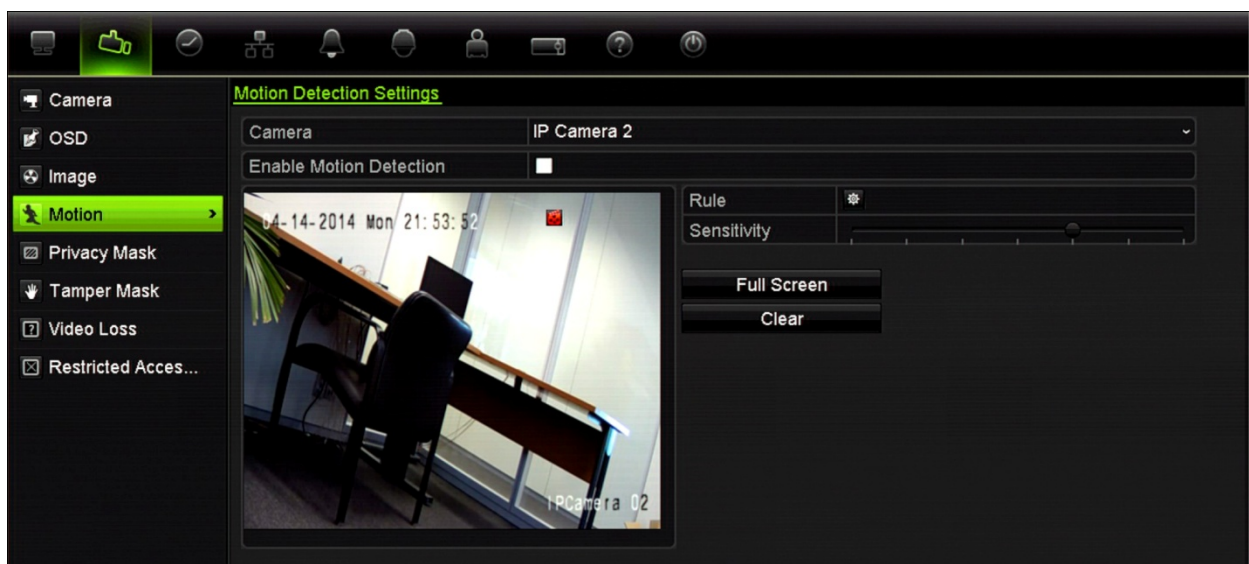
You can set up the schedule from the NVR when the camera can be triggered by motion.

**Note:** Motion detection cannot be set up from the front panel.

## Motion detection set up

To set up motion detection:

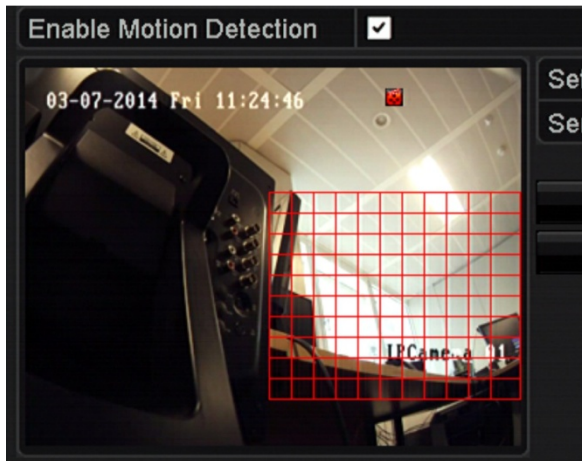
1. From the menu toolbar, click **Camera Management > Motion**.



2. Select the IP camera to detect motion. Each camera must be set up individually.
3. Check **Enable Motion Detection**.
4. Select the areas sensitive to motion.

Click and drag the mouse cursor across the window. The area selected appears as a red grid. Areas covered by the red grid are sensitive to motion detection.






Click **Full screen** to activate the whole window or **Clear** to clear the window.

**Note:** The motion grid is sensitive to motion during configuration.

5. Set the sensitivity level.

Drag the Sensitivity scroll bar to the desired sensitivity level. The highest value is on the right side of the bar.

6. Select the cameras that will record the motion detected.

Click the **Settings**  button. The Settings window appears. Click the **Trigger Channel** tab and select the cameras that will record when a motion alarm is triggered. Click **Apply** to save the settings.



7. Select the recording schedules for motion detection.

In the Settings window, click the **Arming Schedule** tab and select the day of the week and the time periods during the day when motion can be detected. You can schedule up to eight time periods in a day. Default is 24 hours.

Click **Apply** to save the settings. Click **Copy** to copy the settings to other days of the week.

**Note:** Time periods defined cannot overlap.



8. Select the response method to motion detection.

Click the **Rule** tab to define the method by which you want the NVR to notify you of the alarm. See “Description of alarm notification types” on page 37 for the list of methods available.

Click **Apply** to save settings.

9. Click **OK** to return to the motion detection settings window.

10. Click **Back** to return to live view, or continue configuring the NVR settings.

## Setting up system notifications

Setting up system notifications instructs the NVR to alert you when irregular events (exception types) occur to the system, and how to alert you to the event.

You can quickly check the system status by looking at the status LEDs on the front panel. When there is an irregular event with the system, a status icon appears on screen to also alert you. See “Status information” on page 72 for further information.

The exception types available are:

- HDD Full: An installed HDD is full (overwrite option is disabled).
- HDD Error: Errors occurred while files were being written to the HDD, no HDD installed or HDD had failed to initialize.
- Network Disconnected: Disconnected network cable.
- IP Conflicted: Conflict in the IP address setting.
- Illegal Login: Wrong user ID or password used.
- Abnormal Record: Recording or snapshot capture failed.
- PoE Power Overload: Permitted PoE power budget exceeded.

### To set up system notifications:

1. Click the **Alarm settings** icon in the menu toolbar and select **Notification**.
2. Select an exception type and check one or more response options: Exception Type, Audible Warning, Notify Alarm Recipient, Send Email, and Trigger Alarm Output. Click **Apply** to save the settings.



3. Repeat step 2 for each desired exception type.


## Setting up external alarms

The NVR can be configured to record when an alarm is triggered by an external alarm device (for example, PIR detector, dry contacts, etc.). Using PTZ linking, it can trigger a PTZ camera to call a preset or shadow tour if motion is detected.

### To set up external alarms:

1. From the menu toolbar, click **Alarm settings > Alarm Input**.



2. Select the alarm input number of a TVN or IP camera and enter the name of the input, if required.
3. Select the alarm input type, NO or NC.
4. Check the **Enable Alarm Input Setting** box to enable the alarm input function and click the **Rule**  button to set up the rules for the cameras to be triggered, their alarm schedules, method of alarm notification, and PTZ function. The Settings pop-up window appears.
5. Select the cameras to be triggered when an external alarm is detected.

In the Settings window, click **Trigger Channel** and select the cameras to be triggered for recording when an alarm is detected. Click **Apply** to save the settings.

6. Select the arming schedules for the external alarm.

In the Settings window, click the **Arming Schedule** tab, and select the day of the week and the time periods during the day when an alarm input can be detected. You can schedule up to eight time periods in a day. Default is 24 hours.

Click **Apply** to save the settings. Click **Copy** to copy the settings to other days of the week and holiday period.

**Note:** The time periods defined cannot overlap.

7. Select the response method to an external alarm.

Click the **Rule** tab to define the method by which you want the NVR to notify you of the alarm. See “Description of alarm notification types” on page 37 for the list of methods available. Click **Apply** to save settings.

8. Select the PTZ camera function required in response to an external alarm.

Click the **PTZ Linking** tab. Select the PTZ camera as well as the preset, preset tour, or shadow tour that is triggered when the alarm is detected.

Trigger Channel	Arming Schedule	Rule	PTZ Linking
PTZ Linking			IP Camera 2
Call Preset			<input type="radio"/>
Preset			1
Call Preset Tour			<input type="radio"/>
Preset Tour			1
Call Shadow Tour			<input type="radio"/>
Shadow Tour			1

Click **Apply** to save the settings.

9. Click **Copy** to copy the settings to other alarm inputs, if required.
10. Click **OK** to return to the Alarm Input window.
11. Click **Back** to return to live view, or continue configuring the NVR settings.

#### To set up an alarm output:


**Note:** Not all IP cameras have an alarm output.

1. From the menu toolbar, click **Alarm Settings > Alarm Output**.
2. Select the alarm output. You can enter an alarm output name, if desired.
3. Select a time out period. Default is 5 seconds.

The time out setting lets you define how long a signal remains active after the alarm has ended.

If you select “Manually Clear”, the signal remains active until it is manually acknowledged by pressing the alarm button on the front panel or remote control (see “Triggering or clearing alarm outputs manually” below)

4. Select the arming schedules for the alarm output.

Click the **Rule**  button. In the Rule window, select the day of the week and the time periods during the day when alarm outputs can be detected. You can schedule up to eight time periods in a day. Default is 24 hours.

Click **Apply** to save the settings. Click **Copy** to copy the settings to other days of the week and holiday period.

**Note:** The time periods defined cannot overlap.

5. Click **OK** to return to the Alarm Output window.
6. Click **Back** to return to live view, or continue configuring the NVR settings.

## Triggering or clearing alarm outputs manually

When an alarm is activated, the NVR can be set up so that the alarm must be manually acknowledged in order to be silenced. See “Setting up external alarms” on page 41 for information on setting up an alarm to be manually cleared.

All user levels (administrator, guest, and operator) can manually acknowledge an alarm.


### To trigger or clear alarm outputs manually:

1. From the menu toolbar, click **Alarm Settings > Alarm Output**.
2. Click the **Manual Alarm** tab.
3. Select the desired alarm output and click one of the following buttons:
  - **Clear All:** Stop all alarm outputs at once.
  - **Trigger:** Trigger the selected alarm output manually.
  - **Trigger All:** Trigger all alarm outputs at once. This action could be done, for example, when you need to test them.
4. Click **Back** to return to live view.

## Detecting video loss

Video may be lost if the camera develops a fault or is damaged. You can set up the NVR to detect video loss and trigger a system notification.

### To setup video loss detection:

1. From the menu toolbar, click **Camera Management > Video Loss**.
  2. Select a camera to configure for video loss detection.
  3. Check the **Enable Video Loss Alarm** box to enable the feature.
  4. Click the **Rule**  button to enter the Rule window.
  5. Click the **Rule** tab. Select how you want the NVR to notify you of video loss. Click **Apply** to save the settings and then **OK** to return to the previous window.
  6. Click the **Arming Schedule** tab and select the schedule when you want video loss detection to be enabled. Schedules can be set for all week or any day of the week with up to eight time periods per day.
  7. Click the **Apply** button to save settings.
  8. Click **Copy** to copy the settings to other days of the week and holiday period.
- Note:** The time periods defined cannot overlap
9. Click **OK** to return to the Video Loss window.
  10. Click **Back** to return to live view, or continue configuring the NVR settings.

## Detecting video tampering

Video tampering, such as moving a camera to a different position, can also be detected and set to trigger an action on the NVR. Not all IP cameras may support this feature.

**Note:** It is strongly recommended not to configure for video tampering when using PTZ dome cameras.

### To set up video tampering detection:


1. From the menu toolbar, click **Camera Management > Tamper Mask**.
2. Select a camera to configure for tamper-proof.
3. Check the **Enable Tamper Mask** box to enable the feature.
4. Define a tampering detection area.

The tamper detection area setup interface lets you define an area on-screen where you want camera tampering to be detected. Click and drag the mouse across an area to mark that area for video tampering. You can only set one tampering area with the full screen being the maximum area. Click **Clear** to clear the window.



5. Select the tamper detection sensitivity level by clicking the sensitivity scroll bar. Higher sensitivity is to the right of the bar.

6. Select the arming schedules for the tamper.

Click the **Rule**  button. In the Rule window, click the **Arming Schedule** tab and select the day of the week and the time periods during which tamper can be detected. You can schedule up to eight time periods in a day. Default is 24 hours.

Click **Apply** to save the settings. Click **Copy** to copy the settings to other days of the week and holiday period.

**Note:** The time periods defined cannot overlap.

7. Select the response method to an external alarm.

In the Rule window, click the Rule tab and select how you want the NVR to notify you of the alarm. Click **Apply** to save settings and then **OK** to return to the previous window.

8. Click **Back** to return to live view, or continue configuring the NVR settings.



# Chapter 7

## Network settings

You must configure your NVR's network settings before using it over the network.

The NVR must have access to the internet when configuring the network settings.

**Note:** As every network configuration may differ, please contact your Network Administrator or ISP to see if your NVR requires specific IP addresses or port numbers.

### General network settings

To configure general network settings:

1. From the menu toolbar, click **Network Settings > General**.

The screenshot shows the 'General' network settings page. On the left is a sidebar menu with options: General (selected), PPPOE, DDNS, NTP, Email, FTP, SNMP, UPnP, and More Settings. The main area displays various network configuration fields. At the bottom right are 'Apply' and 'Back' buttons. At the bottom left, it says 'User: admin'.

General	
NIC Type	10M/100M/1000M Self-adaptive
Enable DHCP	<input type="checkbox"/>
IPv4 Address	192 . 168 . 1 . 82
IPv4 Subnet Mask	255 . 255 . 255 . 0
IPv4 Default Gateway	192 . 168 . 1 . 1
IPv6 Address 1	
IPv6 Address 2	
IPv6 Default Gateway	
MAC Address	8c:e7:48:4f:1d:19
MTU (Bytes)	1500
Preferred DNS Server	
Alternate DNS Server	
Internal NIC IPv4 Address	192 . 168 . 254 . 1

2. Enter the required settings:



Option	Description
NIC type	The network interface card (NIC) is a device used to connect the NVR to a network. Select the NIC type used from the drop-down list:  10M Half-dup, 10M Full-dup, 100M Half-dup, 100M Full-dup, 1000M Full-dup, or 10M/100M/1000M self-adaptive (Default).
Enable DHCP	Check this box if you have a DHCP server running and want your NVR to automatically obtain an IP address and other network settings from that server.  Default value is disable.
IPv4 Address	Enter the IP address for the NVR.  Default value is: 192.168.1.82
IPv4 Subnet Mask	Enter the subnet mask for your network so the NVR will be recognized within the network.  Default value is: 255.255.255.0
IPv4 Default Gateway	Enter the IP address of your network gateway so the NVR will be recognized within the network. This is typically the IP address of your router.  Default value is: 192.168.1.1
IPv6 Address 1	Enter the IPv6 address for the NVR.  Default value is: fe80::240:30ff:fe48:2975/64
IPv6 Address 2	Enter the IPv6 address for the NVR.
IPv6 Default Gateway	Enter the IPv6 address of your network gateway so the NVR will be recognized within the network. This is typically the IP address of your router.
MAC Address	Displays the MAC address.
MTU (bytes)	Enter a value between 500 and 9676. Default is 1500.
Preferred DNS server	Enter the preferred domain name server to use with the NVR.
Alternate DNS server	Enter the alternate domain name server to use with the NVR.
Internal NIC IPv4 Address	Displays the internal IP address of the on-board PoE ports. Default is 192.168.254.1

3. Click **Apply** to save the settings.
4. Click **Back** to return to live view, or continue configuring the NVR settings.

## PPPoE setup

You can connect the NVR directly to a DSL modem. To do this, you need to select the PPPoE option in the Network Settings menu. Contact your ISP to get the user name and password.

### To configure PPPoE settings:

1. From the menu toolbar, click **Network Settings > PPPoE**.
2. Check the enable PPPoE box.
3. Enter your user name and password, and confirm the password.
4. Click **Apply** and reboot the NVR to save the settings.
5. Click **Back** to return to live view, or continue configuring the NVR settings.

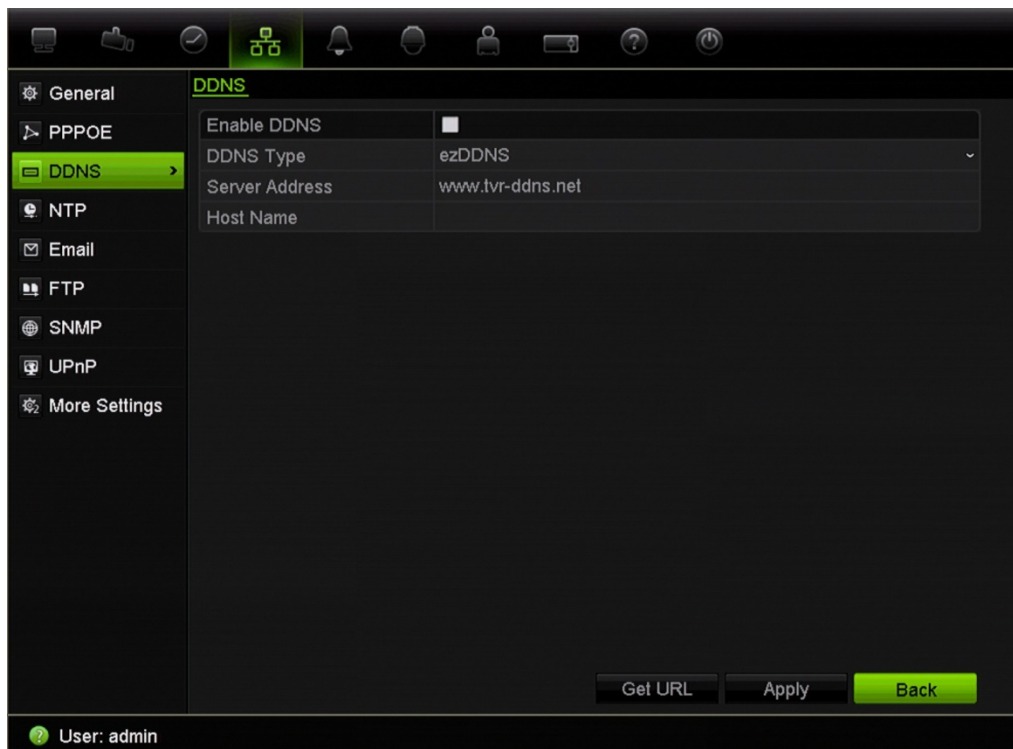
## DDNS setup

You need to register with your ISP before configuring your system for use with DDNS.

There are two ways to set up a DDNS:

- **DynDNS:** Manually create your own host name. You will first need to create a user account using the hosting web site, DynDDNS.org.
- **ezDDNS:** Activate the DDNS auto-detection function to set up a dynamic IP address. The server is set up to assign an available host name to your NVR.

Figure 9: ezDDNS setup window



### To set up DDNS:

1. From the menu toolbar, click **Network Settings > DDNS**.
2. Check the **Enable DDNS** box to enable the feature.
3. From **DDNS type**, select one of the DDNS types listed:
  - **ezDDNS**: Enter the host name or click **Apply** to obtain it. If the host name is not known, click the **Get URL** button. The URL address to access the unit is then displayed (the host name must already have been registered with ezDDNS). If no host name is specified, the DDNS will allocate one automatically.

The maximum length for the host name field is 63 characters. This limit does not include tvn-ddns.net. An example of a host name could be *max63chars.tvr-ddns.net*.

- **NO-IP**: Enter server address (for example, dynupdate.no-ip.com). In the host name field, enter the host obtained from the NO-IP web site. Then enter the user name and password that are registered with the No-IP network.
- **DynDNS**: Enter the server address for DynDNS (i.e. members.dyndns.org). In the NVR domain name field, enter the domain obtained from the DynDNS web site. Then enter the user name and password registered in the DynDNS network.

**Note:** The values for the default gateway, preferred DNS, and alternate DNS must also be filled in on the main Network page in order for the DDNS to correctly function.

4. Click **Back** to return to live view, or continue configuring the network settings.

## NTP server setup

A Network Time Protocol (NTP) server can also be configured on your NVR to keep the date and time current and accurate.

**Note:** If the device is connected to a public network, you should use an NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44) or europe.ntp.pool.org. If the device is setup in a more customized network, NTP software can be used to establish an NTP server used for time synchronization.

### To set up an NTP server:

1. From the menu toolbar, click **Network Settings > NTP**.
2. Check the **Enable NTP** box to enable feature. It is disabled by default.
3. Enter the NTP settings:
  - **Interval**: Time in minutes to synchronize with the NTP server. The value can be between 1 and 10080 minutes. Default is 60 minutes.
  - **NTP Server**: IP address of the NTP server.

- **NTP Port:** Port of the NTP server.
4. Click **Apply** to save the settings.
  5. Click **Back** to return to live view, or continue configuring the NVR settings.

## Email setup

Your NVR can send email notifications of alarms or notifications through the network.

**Note:** Ensure that the DNS address has been set up correctly beforehand.

### To configure email settings:

1. From the menu toolbar, click **Network Settings > Email**.
2. Enter the required settings.

Option	Description
Enable Server Authentication	Check the box if your mail server requires authentication and enter the login user name and password.
SMTP Server	Enter the SMTP server's IP address.
SMTP Port	Enter the SMTP port. The default TCP/IP port for SMTP is 25.
Enable SSL	Check the box to enable SSL if it is required by the SMTP server. This feature is optional.
Sender	Enter the name of the sender of the email.
Sender's Address	Enter the sender's email address.
Select Receiver	Select an email recipient. Up to three receivers can be selected.
Receiver Name	Enter the name of the receiver of the email.
Receiver's Address	Enter the email address of the receiver.
Enable Attached Snapshot	Check the Enable Attached Picture box if you want to send an email with attached alarm images.
Interval	<p>Select an interval range in the Interval box.</p> <p>The interval range represents the time range between the alarm images being sent. For example, if you set the interval range at two seconds, the second alarm image will be sent two seconds after the first alarm image.</p> <p>The interval times are 2, 3, 4, or 5 seconds. Two seconds is default.</p>

3. Click **Test** to the test email settings.

**Note:** We recommend that you test the email settings after entering values in the email window.

4. Click **Apply** to save the settings.
5. Click **Back** to return to live view, or continue configuring the NVR settings.

## FTP server setup to store snapshots

You can upload your snapshots to an FTP server for storage.

**Note:** It is not possible to stream video to an FTP site.

**To configure the FTP server settings:**

1. From the menu toolbar, click **Network Settings > FTP**.
2. Check the **Enable FTP** box.
3. Enter the FTP server information: Server address, FTP port, user name, and password.
4. Select the desire directory. The root directory is default.
5. Click **Apply** to save the settings.
6. Click **Back** to return to live view, or continue configuring the NVR settings.

## SNMP setup

SNMP is a protocol for managing devices on networks. When you enable SNMP in the menu, network management systems can retrieve NVR status information from the NVR via SNMP.

When you set the trap address and trap port in the NVR menu to the network management system's IP address and port number, and set up the network management system as trap receiver, trap notifications (such as startup) are sent from the NVR to the network management system.

Before configuring this function, you must first install the SNMP software.

**To configure SNMP protocol settings:**

1. From the menu toolbar, click **Network Settings > SNMP**.
2. Check the **Enable SNMP** box.
3. Enter the required SNMP settings: SNMP version (V2 is default), SNMP port read community, write community, trap address, and trap port.
4. Click **Apply** to save the settings.
5. Click **Back** to return to live view, or continue configuring the NVR settings.

## UPnP setup

The NVR supports UPnP (Universal Plug and Play). This feature lets the NVR automatically configure its own port forwarding, if this feature is also enabled in the router.

You can select one of two methods to set up UPnP:

**Automatic mapped type:** The NVR automatically uses the free ports available that were set up in the Network Settings menu.

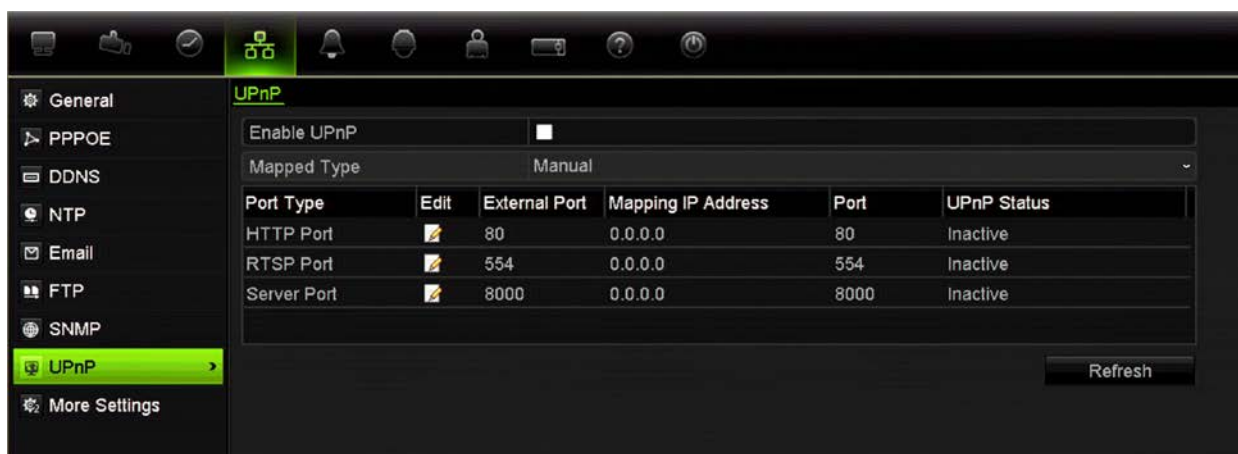
**Manual mapped type:** You enter the particular external port settings and IP addresses required to connect to the desired router.

**To enable UPnP:**

1. Connect the NVR to the router.

**Note:** The router must support UPnP and this option must be enabled.

2. From the menu toolbar, click **Network Settings > UPnP**.
3. Check the **Enable UPnP** box.



4. From **Mapped Type**, select **Auto** or **Manual**.

If **Manual** is selected, enter the external ports and external IP addresses required. Click the Edit icon to change the values.

5. Click **Apply** to save the settings.
6. Click **Back** to return to live view, or continue configuring the NVR settings.

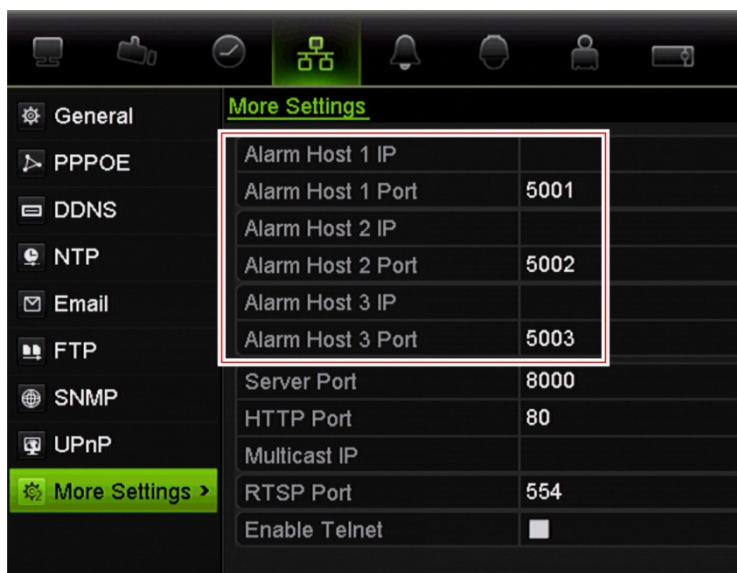
## Remote alarm host setup

If a remote alarm host is set, the NVR sends a signal to the host when an alarm is triggered. The remote alarm host must have the TruVision Navigator server software installed.

**To set up a remote alarm host:**

1. From the menu toolbar, click **Network Settings > More Settings**.
2. Enter Alarm Host IP and Alarm Host Port values.

Alarm host IP represents the IP of the remote PC where the Network Video Surveillance software installed. The alarm host port value must be the same as software's alarm monitor port. Up to three alarm hosts can be set. For each alarm host, the default port is 5001, 5004, and 5003.



3. Click **Back** to return to live view, or continue configuring the network settings.

## Multicast setup

Setting up multicasting resolves limitation issues when streaming videos through a network access device. A multicast address spans the Class-D IP range of 224.0.0.0 to 239.255.255.255. We recommend that the IP address range of 239.252.0.0 to 239.255.255.255 be used.

### To set up multicasting:

1. From the menu toolbar, click **Network Settings > More Settings**.
2. Enter a Multicast IP address.  
**Note:** When adding a device to the Network Video Surveillance software, the multicast address must be the same as the NVR's multicast IP.
3. Click **Apply** to save the settings.
4. Click **Back** to return to live view, or continue configuring the NVR settings.

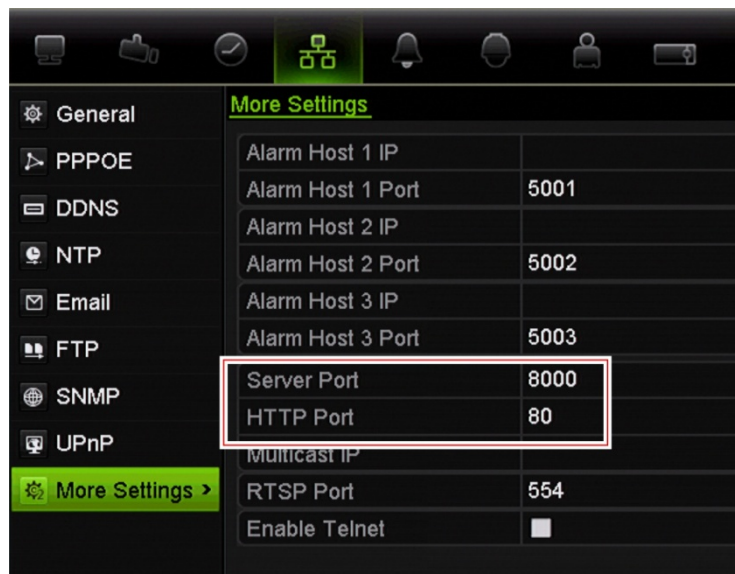
## Server and HTTP ports setup

You can change the server and HTTP ports from the default settings in the Network Settings window. The default server port is 8000 while that of the default HTTP port is 80.

**Note:** The server port has a port range of 1024 to 65535 and is used for remote client software access. The HTTP port is used for remote internet browser access.

### To change the default ports:

1. From the menu toolbar, click **Network Settings > More Settings**.
2. Enter the new Server Port and HTTP Port values.



3. Click **Apply** to save the settings.
4. Click **Back** to return to live view, or continue configuring the NVR settings.

## RTSP service port setup

The RTSP (Real Time Streaming Protocol) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers.

### To configure RTSP service port:

1. From the menu toolbar, click **Network Settings > More Settings**.
2. Enter the RSTP port value. The default value is 554.
3. Click **Apply** to save the settings.
4. Click **Back** to return to live view, or continue configuring the NVR settings.

## Telnet setup

For Technical Support only.



# Checking network status

You can easily check network traffic in order to obtain information about the NVR such as its linking status, MTU, sending/receiving rate, MAC address, and NIC type.

The Network Detection page shows the network traffic between the TVN 10 and your local network. However, the traffic between the plug and play cameras and the TVN 10 is not shown.

You can also check the network connection status by testing its delay and packet loss.

## To check network traffic:

1. From the menu toolbar, click **System Settings > Net Detect**
2. Click the **Traffic** tab to display the Traffic window. The information displayed is refreshed once a second.



## To check network delay and packet loss:

1. From the menu toolbar, click **System Settings > Net Detect**.
2. Select the **Network Detection** tab.
3. Under the section “Network delay, Packet loss test”, enter the destination address and click **Test**.

The test result appears in a pop-up window.

4. If you need to check the current network parameters, click the **Network** button to get an overview.

## To check network statistics:

1. From the menu toolbar, click **System settings > Net Detect**.
2. Select the **Network Stat.** tab.

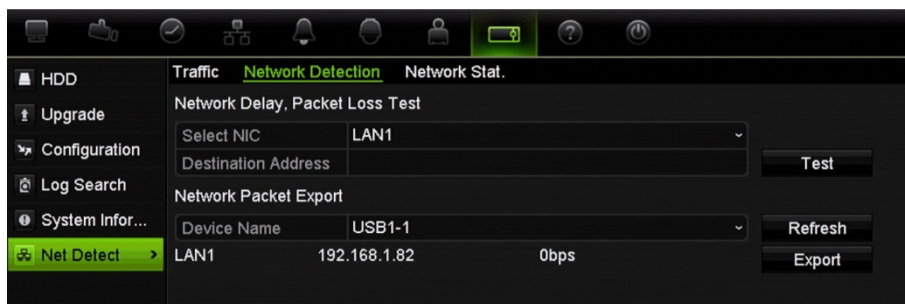
3. The latest information is displayed on the bandwidth used by remote live and playback as well by Net Receive Idle and Net Send Idle. Click **Refresh** to update the information.

## Exporting network packet data

When the NVR is connected to a network, you can export the test results to a USB-flash drive, CD-RW, and other local backup devices.

**To export network packet data:**

1. From the menu toolbar, click **System Settings > Net detect**.
2. Select the **Network Detection** tab.



3. Under the section “Network Packet Export”, click **Refresh** to get a list of the local backup devices available. Select one from the list.
4. Click **Export**. Up to 1M of data can be exported at a time.
5. Click **Back** to return to live view, or continue configuring the NVR settings.

## Port forwarding

When using an internet connection make sure that ports are open or forwarded, as follows:

- **When using TruNav:** Port 8000 and 554
- **When using a web browser:** Port 80 and 554

See “Accessing the web browser” on page 119 for more information.

# Chapter 8

## Storage management

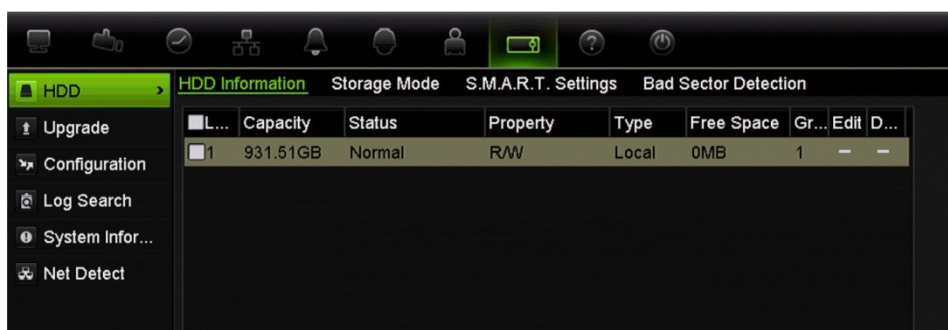
This chapter describes how to handle HDDs.

### Initializing HDDs

The in-built HDD must be initialized before it can be used. You can also re-initialize the HDD. However, all data on the HDD will be destroyed.

**To initialize an HDD:**

1. From the menu toolbar, click **System Settings > HDD**.



2. Select the HDD to be initialized.
3. Click the **Init** button to begin initialization.

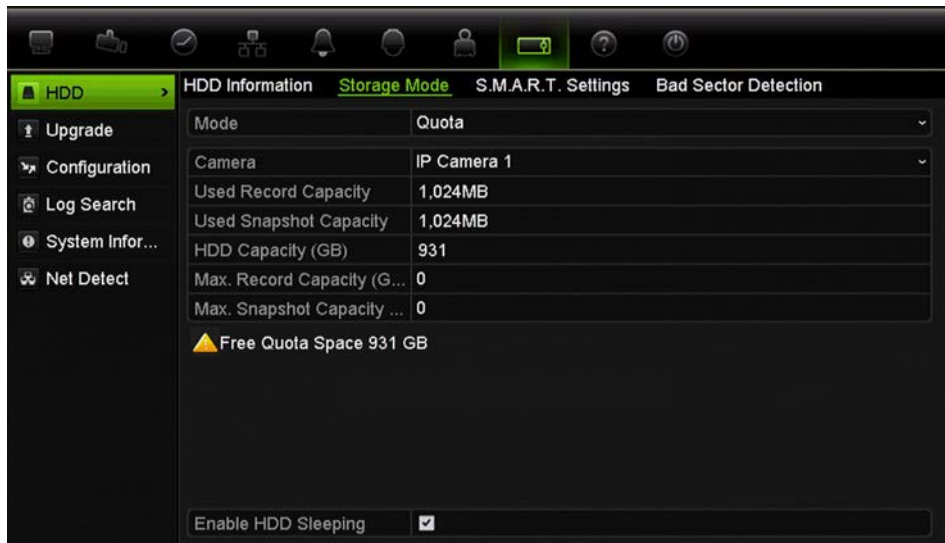
After the HDD has been initialized, the status of the HDD changes from Abnormal to Normal.

### Controlling disk storage mode on the HDD

You can allocate on an HDD the maximum permitted storage and snapshot capacities from each camera.

**To allocate the maximum recording and snapshot capacities on an HDD:**

1. Click **System Settings > HDD > Storage Mode**.



2. Under **Mode**, select **Quota**.
3. Select a camera whose storage capacity you want to change and enter the values in GB for maximum record capacity and maximum picture capacity. The used record and picture capacities as well as the maximum record and snapshot storage capacities of the HDD are listed.
4. Click **Apply** to save the settings.
5. If you want to copy these values to other cameras, click **Copy** and select the cameras. Click **OK**. Click **Apply** to save the settings.
6. Click **Back** to return to live view. You can also continue configuring the NVR settings.

## Setting up HDD groups

Your NVR can organize multiple HDDs into groups. Videos from specified channels can be set to be recorded onto a particular HDD group. You could, for example, save the records from a couple of high priority cameras to one HDD, and save the recordings from all the other cameras to another HDD.

**To set up an HDD group:**

1. From the menu toolbar, click **System Settings > HDD > Storage Mode**.
2. Under **Mode**, select **Group**.



3. Under **Record on HDD Group**, select the HDD group number.
4. Check the channels to be added to this group.  
**Note:** By default, all channels belong to HDD group 1.
5. Click **Apply** to save the settings.
6. Click **Back** to return to live view. You can also continue configuring the NVR settings.


## Setting the HDD property

You can change the behavior of your HDD by changing its property. It can be set to read-only or read/write (R/W).

An HDD can be set to read-only to avoid important recorded files from being overwritten when the HDD becomes full.

**Note:** Ensure that the HDD storage mode is "Group" before setting the HDD to read-only.

### To change an HDD status property:

1. From the menu toolbar, click **System Settings > HDD > HDD Information**.
2. Select the HDD whose property you want to change.
3. Click the **Edit** icon . The Local HDD Settings window appears.
4. Click the desired HDD property for the selected HDD.
5. Click the group number for this HDD.
6. Click **Apply** to save and exit the window.

**Note:** Once set to read-only, the HDD cannot be used to save recorded files until it is set back to read/write (R/W). If the HDD that is currently being written to is set to read-only, the data is then recorded to the next HDD. If there is only one HDD present, setting it to read-only means the NVR cannot record.

7. Click **Back** to return to live view, or continue configuring the NVR settings.

## Checking HDD status

You can check the status of any of the installed HDDs on the NVR at anytime.

### To check the status of an HDD:

1. From the menu toolbar, click **System Settings > HDD**.
2. Note the status of the HDDs listed under the Status column.

If the status is listed as Normal or Sleeping, the HDD is in working order. If it is listed as Abnormal and has already been initialized, the HDD needs to be replaced. If the HDD is Uninitialized, you need to initialize it before it can be used in the NVR. Refer to “Initializing HDDs” on page 57 for more information.

**Note:** This information is also available under **System Settings > System Information > HDD** window.

## Configuring HDD alarms

HDD alarms can be set to trigger when an HDD is uninitialized or in an abnormal state.

### To set HDD alarms:

1. From the menu toolbar, click **Alarm Settings > Notification**.
2. Under **Exception Type**, select **HDD Full** and check the desired notification method. See “Description of alarm notification types” on page 37 for more information.
3. Select **HDD Error** and check the desired notification method.
4. Click **Apply** to save the settings.
5. Click **Back** to return to live view, or continue configuring the NVR settings.

## Checking the S.M.A.R.T. information

S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) reports on a variety of hard drive attributes. It helps ensure that the HDD is functioning properly at all times while protecting video stored on the hard drive.

To view the S.M.A.R.T. information of an HDD:

1. From the menu toolbar, click **System Settings > HDD > S.M.A.R.T. Settings**.

ID	Attribute Name	Status	Flags	Threshold	Value	Worst	Raw Value
0x1	Raw Read Error Rate	OK	2f	51	200	200	0
0x3	Spin Up Time	OK	27	21	200	177	4975
0x4	Start/Stop Count	OK	32	0	100	100	24
0x5	Reallocated Sector Count	OK	33	140	200	200	0
0x7	Seek Error Rate	OK	2e	0	200	200	0
0x9	Power-on Hours Count	OK	32	0	98	98	1581
0xa	Spin Up Retry Count	OK	32	0	100	253	0
0xb	Calibration Retry Count	OK	32	0	100	253	0
0xc	Power Cycle Count	OK	32	0	100	100	22
0xc0	Power Off Retract Count	OK	32	0	200	200	20
0xc1	Load/Unload Cycle Count	OK	32	0	200	200	3
0xc2	Power Temperature	OK	22	0	118	116	32
0xc4	Reallocation Event Count	OK	32	0	200	200	0
0xc5	Current Pending Sector Count	OK	32	0	200	200	0
0xc6	Offline Scan Uncorrected Sectors	OK	30	0	100	253	0

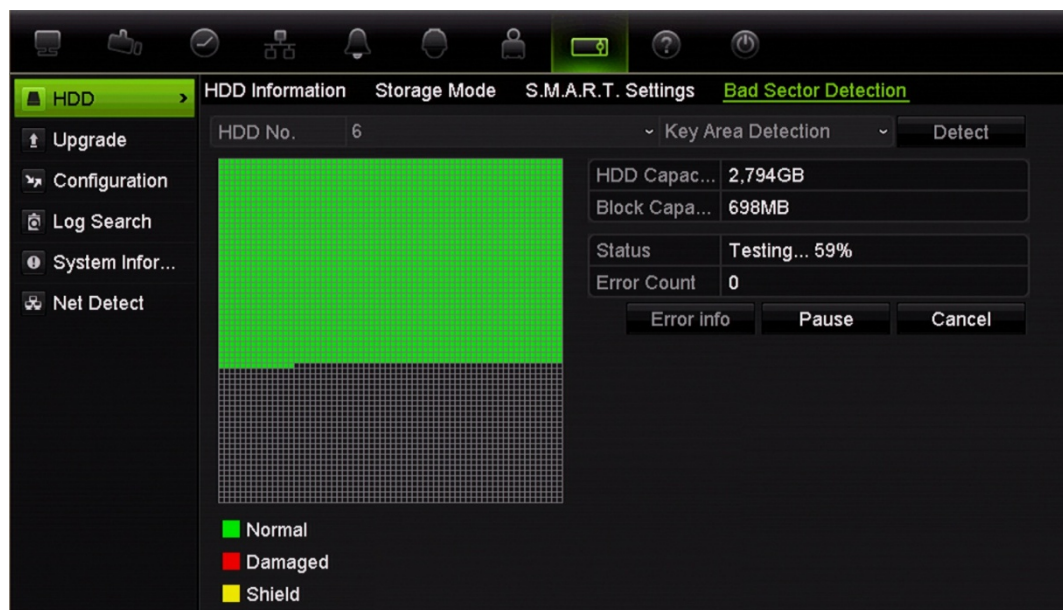
2. Select the HDD whose data you want to see. A detail listing of the S.M.A.R.T. information is displayed.
3. If you want to continue to use an HDD when the S.M.A.R.T. test has failed, check the box **Continue to use when this disk when self-evaluation has failed**. Click **Apply** to save the settings.
4. Click **Back** to return to live view, or continue configuring the NVR settings.

## Bad sector detection

You can improve the performance of your HDDs by ensuring that they have no bad sectors. Bad sectors can slow down an HDD when reading or writing data, for example.



Figure 10: Bad sector detection window



#### To set up an HDD group:

1. From the menu toolbar, click **System Settings > HDD > Bad Sector Detection**.
2. Select the HDD you want to test.
3. Select whether you want to do a key sector detection or a full detection, and click **Detect**.
4. The system checks the HDD. The color-coded result is displayed on screen. If there are bad sectors found, click **Error Info** to see a list of the errors found.
5. If required, click **Pause** to pause the test or **Cancel** to cancel it.
6. Click **Back** to return to live view, or continue configuring the NVR settings.



# Chapter 9

## Camera settings

This chapter describes how to configure the IP cameras.

The TVN 10 can support up to 16 network cameras. The number of cameras supported depends on the NVR model and available bandwidth.

### Cameras supported

The NVR supports TruVision and UltraView IP cameras as well as TVE encoders. It supports a wide range of third party IP cameras through compliancy with the Onvif and PSIA standards for open camera communication.

### Adding/removing IP cameras

Before adding an IP camera to the NVR system, it is important that the network settings of the NVR are correctly set up.

IP cameras connected directly to the NVR are automatically recognized by the unit and set up with default settings. Other cameras connected via the network can be discovered and added.

There are two ways to add a camera to the NVR system:

- **Plug and Play:** Use this method if the IP cameras are located on the same LAN as the NVR.

The plug and play functionality is available for TruVision IP cameras, which can be connected directly to the PoE ports and configured automatically.

Non plug and play cameras are all cameras connected over the network as well as any camera that is connected to the PoE ports but is not a plug and play camera.

To power a non plug and play camera over PoE and connect it, plug it into a PoE port and manually add the camera as if it was a network IP camera.

Plug and play cameras are configured automatically with default settings (see

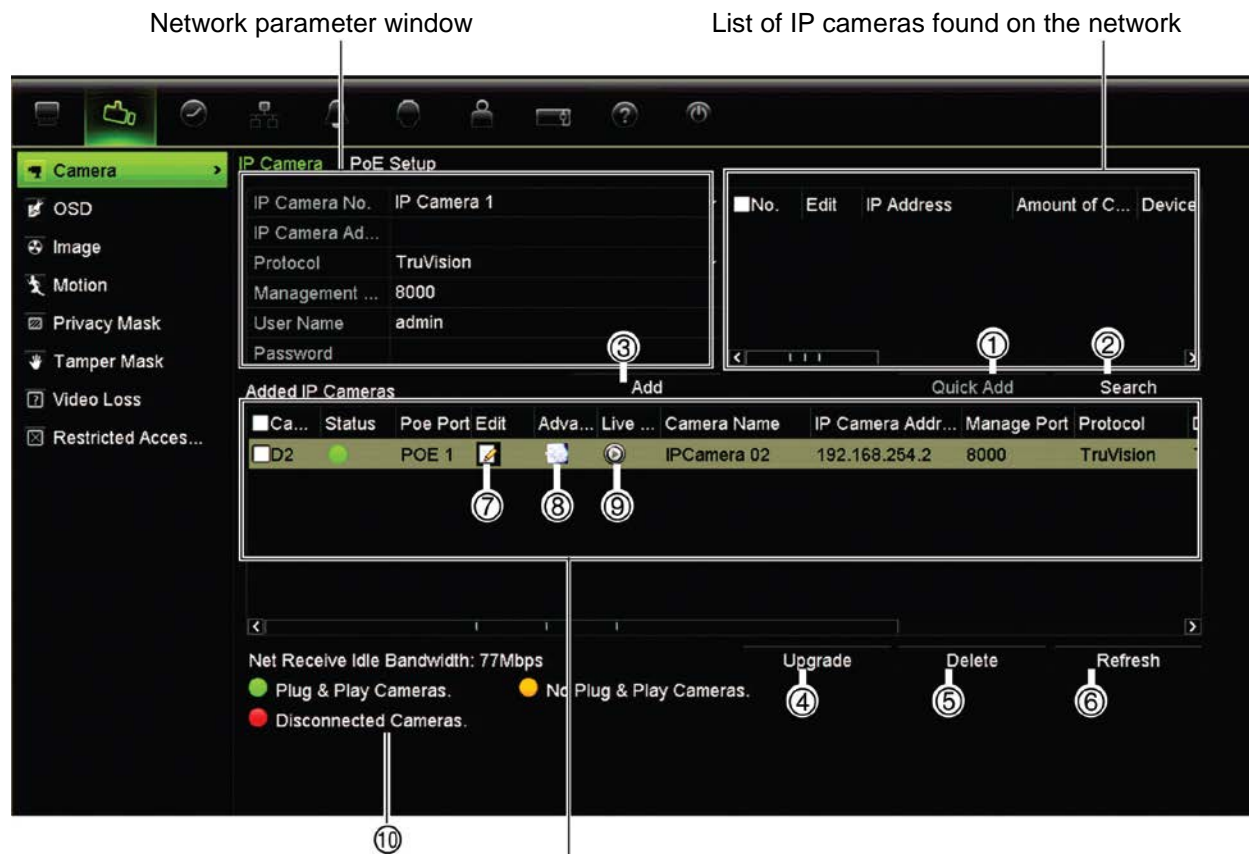
Appendix D “Default menu settings” en page 135). When modifying the settings of a plug and play IP camera, the settings remain in place until the camera is disconnected and reconnected. Upon reconnection, the camera automatically returns to its default settings.

- **Manual:** Use this method if the IP cameras are located on a different LAN from the NVR or are located on the internet.

**Note:** If you configure an IP camera “plug and play” and subsequently change it to “manual”, the camera settings are then saved to the PoE port to which the camera is connected.

See Figure 11 on page 65 for information on the IP camera window.

Figure 11: IP camera window



List of IP cameras added to the NVR.

The columns of camera information are: Camera no., Status, PoE Port, Edit, Advanced Set, View, Camera name, IP Camera Address, Management Port, Protocol, Device Model, Serial Number, and Firmware.

1. **Quick Add:** Add the selected cameras from the search results list to the NVR system without modifying the camera configuration.
2. **Search:** Search the network for available IP cameras.
3. **Add:** After entering the details of a camera in the configuration window, add it to NVR system.
4. **Upgrade:** Upgrade IP camera software. Insert USB flash drive in NVR and select the file to upgrade. The camera will automatically reboot once the software is upgraded.
5. **Delete:** Delete the selected IP camera.
6. **Refresh:** Update the information displayed on a camera in the NVR device list.
7. **Edit:** Change the information on the selected IP camera.
8. **Advanced Settings:** Add or change the IP address of the selected camera as well as change its password.
9. **Live View:** View the selected IP camera.
10. **Camera status indication:**  
Green = Plug-and-Play cameras; Red = Disconnected cameras; Yellow = No Plug-and-Play cameras.

### To automatically add an IP camera:

1. From the menu toolbar, click **Camera Management > Camera**.
2. Click **Search** to locate any IP cameras located in the NVR LAN. When the search is complete, a list of the available cameras is shown.
3. Check the boxes of the desired cameras that you want to add to the NVR system.

4. Click **Quick Add** to add the selected cameras to the list of devices in the NVR system.

The cameras are added to the end of the list of devices.

5. To test if a camera connection is operational, select the desired camera from the list of devices connected to the NVR and click **Live**. A pop-up window should appear showing the camera's live view.


#### **To manually add an IP camera:**

1. From the menu toolbar, click **Camera Management > Camera**.
2. Click **Add** to add the camera to the list of devices in the NVR system.

The camera is added to the end of the list of devices.

**Note:** Only one camera can be manually added at a time.

#### **To change the information about a listed IP camera:**

1. From the menu toolbar, click **Camera Management > Camera**.
2. Click the **Edit** icon  for the selected camera. In the pop-up window, select the desired options.

To change the method used to add an IP camera, under **Adding Method** select Manual or Plug-and-Play from the drop-down list.

If **Manual** is selected, enter the details about the camera.

3. Click **OK** to save the changes.

## **Configuring the camera OSD settings**

The on-screen display (OSD) settings appear in live view mode and include the camera name, time and date. They also are included in recordings.

You can also adjust the transparency of the OSD relative to the background so that it is easier to read or is less prominent on screen.

## To configure the OSD settings:

1. From the menu toolbar, click **Camera Management > OSD**.



2. Enter a name for the camera, if required. The name can have up to 32 alphanumeric characters.
3. Check the Display Name, Display Date, and Display Week boxes to display the camera name, date, and week on-screen.
4. Select a date format and a time format.
5. Select how you want the camera information displayed.  
Select one of the options from the drop-down list (A). Default is non-transparent & non-flashing.
  - Transparent & flashing
  - Transparent & not flashing
  - Non-transparent & flashing
  - Non-transparent & non-flashing
6. There are two text boxes in the camera view window; one for the camera name (red box) and the other for the date/time (yellow box). Using the mouse, click and drag a text box to the desired position.
7. Click **Apply** to save the settings and then click **Back** to return to live view.

## Setting up privacy masking

You can define an area on screen to remain hidden from view. For example, you can choose to block the view of a camera when overlooking residential premises. This hidden area is referred to as privacy masking. Privacy masking cannot be viewed in live view or in recorded mode, and appears as a black area on the video image.

### To setup a privacy mask:

1. From the menu toolbar, click **Camera Management > Privacy Mask**.
2. Select the camera for which you want to set up privacy masking.
3. Check the **Enable Privacy Mask** box to enable the feature.

4. Set up the mask area. Up to four areas can be set.

Using the mouse, click and drag a privacy-mask box in the camera view window over the desired area. You can set up to four areas for privacy masking. Masked areas are dimmed and outlined in four different colors. Click **Apply** to save settings.



To delete a mask, click **Clear** for that color mask.

5. Click **Apply** to save the settings and then click **Back** to return to live view.

## Adjusting video image settings

You may need to adjust the camera image depending on the location background in order to get the best image quality.

You can manually adjust the brightness, saturation, contrast, and hue values using the Customize option. Adjustments to the settings affect both live view and recorded images.

**Note:** These options can also be modified from the image settings button on the live view quick access toolbar (see “Accessing frequently used commands” on page 75.)

### To adjust display settings:

1. From the menu toolbar, click **Camera Management > Image**.
2. Select the camera whose video image settings you want to change.
3. Select **Custom** and adjust the brightness, saturation, contrast, and hue values by dragging each scroll bar.

**Note:** Click the **Default** button to return the image values to default (128).

4. Click **Apply** to save the settings and then click **Back** to return to live view.

# Watermarking

You can overlay digital watermarking to authenticate images and protect them from alterations. Watermarking on an image is only visible during playback of exported video.

The NVR supports watermarking from TruVision cameras and encoders.

Use the playback application, Player, to reveal the watermarking on archived video. Enable the Watermarking option in Player.

## Hiding a camera image from view

There may be occasions when you want to control who can live view the camera images on a local monitor, such as if there is a camera located in a changing room. The NVR lets you select which camera (or cameras) is not displayed on the local monitor unless the user is logged in and has permission to live view the camera. A restricted access camera is not displayed on screen when no user is logged in. Instead a person walking by sees a black screen with the Interlogix logo. See Figure 12 below.

**Figure 12: Example of a restricted-access camera image**



### To set up a camera for restricted access view:

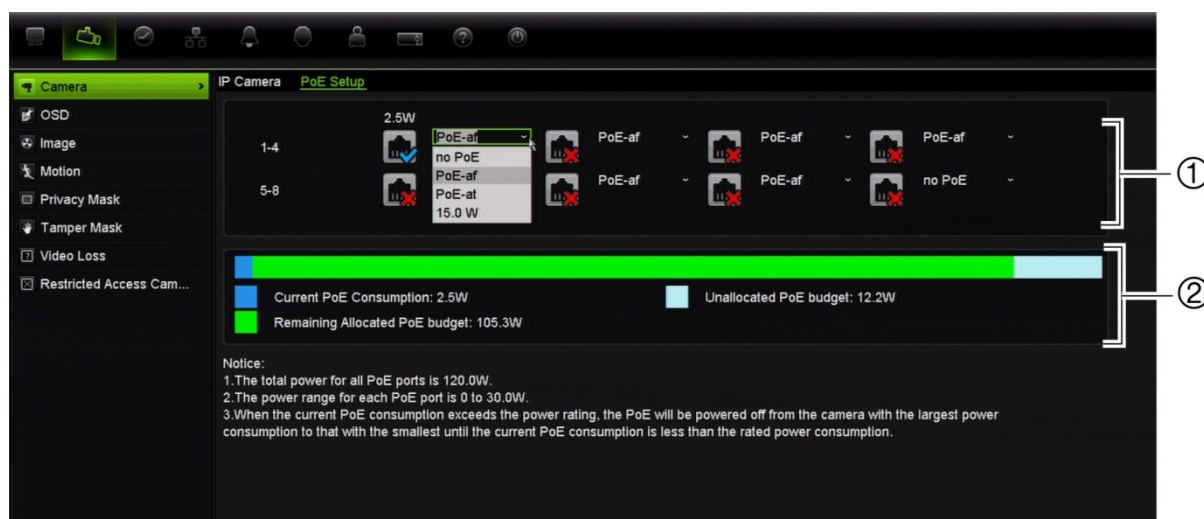
1. From the menu toolbar, click **Camera Management > Restricted Access Camera**.
2. Check which camera or cameras you want to be hidden and click **Apply**.



# PoE power budget

It is important when installing IP cameras to calculate the total power consumption required so that it is less than the power budget of the NVR switches. The NVR lets you easily track on-screen the current and remaining power consumption for all cameras directly connected to its switches. See Figure 13 below.

**Figure 13: PoE power budget information on IP cameras**



1. Select the PoE type required for each camera.
2. Dynamic tracking of the current PoE power consumption (blue), unallocated PoE power (white), and remaining allocated PoE power budget (green) shown.

The IP cameras will specify which type of PoE they require. You can set up each camera individually for no PoE, PoE-at, PoE-af, or 15 W. A PoE port can support up to 30 W maximum.

The NVR has a maximum of eight PoE ports, depending on the model. The total PoE power budget for the 4-channel NVR is 50 W, and that for the 8 and 16-channel NVRs is 120 W.

The PoE-af port can support between 0 and 15.4 W and the PoE-at port can support between 0 and 30 W. See Table 6 below for a description of the maximum number of IP cameras that can be connected depending on the PoE type used.

**Table 6: Maximum number of IP cameras that can be connected by PoE power consumption**

NVR	12.5 W	15 W	PoE-af	PoE-at
4-channel	4	-	3	1
8-channel	-	8	7	4
16-channel	-	8	7	4



**To display the PoE power consumption information:**

1. From the menu toolbar, click **Camera Management > Camera > PoE Setup**.
2. Select the PoE type required for each camera: No PoE, PoE-af, PoE-at, or 15.0 W.
3. Click **Apply** to save the settings and then click **Back** to return to live view.

# Chapter 10

## Live view






### Description of live view

Live view mode is the normal operating mode of the unit where you watch live images from the cameras. The NVR automatically enters into live view mode once powered up. On the viewer, you can see the current date and time, camera name, and whether a recording is in progress.

### Status information

Information on the system and camera status is displayed as icons on the monitor. The camera status icons are shown for each camera. Each icon represents information on a specific item. These icons include:

**Table 7: Description of the on-screen status icons**

Icon	Description
	Indicates a sensor alarm.
	Indicates recording (such as recording, motion detection, or alarm-triggered recording).
	Indicates a motion detection event.
Blank screen	Indicates a video loss event.
	Indicates alarms and system notifications. Clicking the icon opens a window that lists the alarms and notifications.
	Indicates manual recording.

More than one icon can be displayed at the same time.

The system status is displayed on the front panel by the status LEDs.

## Video output

The NVR can be connected to up to two monitors, one VGA and one HDMI. However, the same image is displayed when two monitors are connected.

## Audio output

The HDMI monitor connector on the back panel outputs both video and audio signals. There is an audio output on the back panel for speakers.

## Controlling live view mode

Many features of the live view mode can be quickly accessed by placing the cursor on a live image and clicking the right-button of the mouse. The mouse menu appears (see Figure 14 on page 73).

The default settings of the menu commands are provided in “Default menu settings” on page 135.

Figure 14: The mouse menu for the main monitor

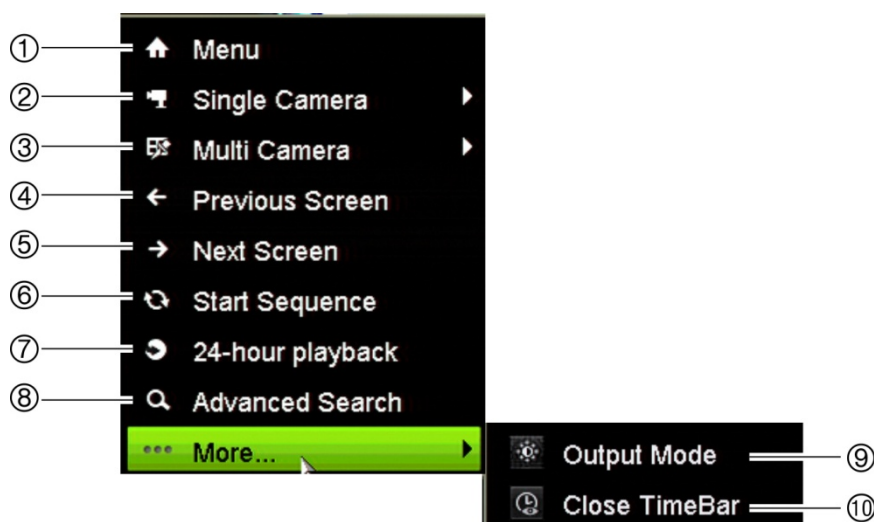


Table 8: Mouse menu

Item	Name	Description
1.	Menu	Enter the Main menu.  This option is not available from monitor B.
2.	Single Screen	Switch to a full-screen view for the selected camera from the dropdown list.
3.	Multi Camera	Switch between the different multiview options from the dropdown list.

Item	Name	Description
4.	Previous Screen	Displays the previous camera.
5.	Next screen	Displays the next camera.
6.	Start Sequence	Turn on sequence mode. The window automatically sequences between cameras. See "Viewing in multiview" on page 74. Go to Menu > Display Mode Settings > Layout > Dwell Time to set up.
7.	24-hour Playback	Playback the recorded video of the current day from the selected camera. See "24-hour playback" on page 94.
8.	Advanced Search	Enter the advanced video search menu. See "Searching recorded video" on page 96 for more information.
9.	Output Mode	Select Standard, Bright, Soft, or Vivid mode to display.
10.	Close Timebar	Open/close the time bar.

## Multiview format

The NVR has full-screen display format as well as five multiview formats.

### Viewing in full screen

Press the numeric button on the front panel to switch to the corresponding camera display. For example, press button 10 to view camera 10.

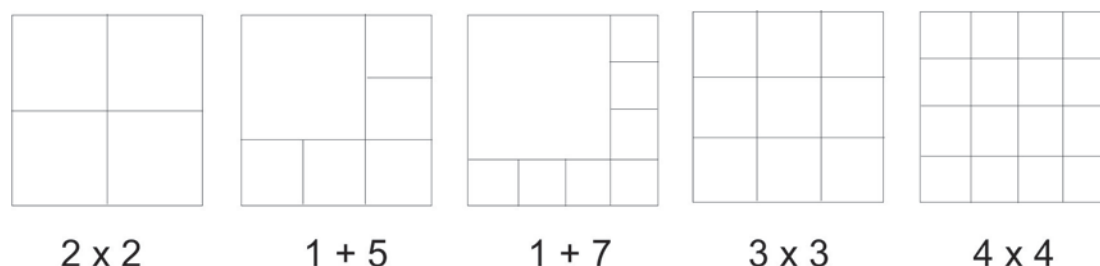
Right-click the mouse and select **Single Camera** from the menu. Select the camera required from the list.

### Viewing in multiview

A video tile is any cell in a multiview display. A camera image can only be shown in one video tile at a time. The NVR has five multiview display formats available as well as full screen. See Figure 15 below.

To change the multiview display that appears by default, go to the Display menu. See "Changing the camera sequence" on page 78 for more information.

**Figure 15: Multiview display formats**



### To select a multiview format:

1. Press the Display button on the front panel to cycle through different display formats.

You can also right-click the mouse and select **Multi Camera** from the menu. Select the desired multiview display layout.

## Sequencing cameras

The sequencing feature allows a camera to be displayed briefly on screen, before advancing to the next camera in the sequence list.

The default sequence displays each camera in numerical order. However, each camera on the monitor can have a pre-programmed sequence order. See “Changing the camera sequence” on page 78 for more information.

### Sequencing live view mode using the front panel:

1. Select the camera from where you want to start sequencing.
2. Press the **Seq** button on the front panel to start sequencing.
3. Press the **Seq** button again to stop the sequencing.

### Sequencing live view mode using the mouse:

1. Select the camera from where you want to start sequencing.
2. Right-click the mouse and select **Start Sequence** to start the sequencing.
3. Right-click the mouse and select **Stop Sequence** to stop the sequencing.













## Accessing frequently used commands

The quick access toolbar in live view lets you quickly access regularly used commands. Position the cursor over a video image and left-click the mouse. The toolbar appears below the selected camera image (see Figure 16 below).

Figure 16: Quick access toolbar



Table 9: Description of the quick access toolbar icons

Icon	Description
	<b>Freeze:</b> Freeze the live image of the selected camera. Although the image pauses, time and date information does not. The system clock continues to run.
	<b>Manual Recording:</b> Start/stop manual recording. The icon is red when manual recording is enabled. See “Manual recording” on page 33 for information on setting up this function.
	<b>Instant Playback:</b> Playback the recorded video from the last programmed period (default time is five minutes). If no recording is found, then there was no recording made.  Click the icon and select the desired camera. Click OK.  See “Instant playback” on page 93 for information on programming this time.
 	<b>Audio:</b> Enable/Disable audio output. The audio option must already have been setup in the Display menu.
	<b>Capture:</b> Capture a snapshot of a video image. The image is saved on the unit.
	<b>PTZ Control:</b> Enter PTZ control mode.
	<b>Digital Zoom:</b> Enter digital zoom. See “Digital zoom” below for further information.
	<b>Image Settings:</b> Enter the image settings menu to modify the image lighting levels. There are three options: <b>Customize:</b> Modify brightness, contrast, saturation, and hue values. <b>Default:</b> Restore image settings to previous values.  These settings can also be modified from the Camera>Image menu (see page “Adjusting video image settings” on page 68.
	<b>Auxiliary focus:</b> Automatically focus the camera lens for the sharpest picture.
	<b>Lens Initialization:</b> Initialize the lens of a camera with a motorized lens, such as PTZ or IP cameras. This function helps to maintain lens focus accuracy over prolong periods of time.
	<b>Close:</b> Close the shortcut toolbar.

## Digital zoom

You can easily zoom in or out of a camera image in live view mode and playback using the digital zoom command. The zoom command magnifies the camera image at least 16 times. See Figure 17 below.

Figure 17: Digital zoom window



### To quickly zoom in/out on a camera image:

1. Select the camera you wish to use.
2. Left-click the mouse and select the digital zoom icon. The digital view window appears.
3. Left-click the mouse and drag the red square over the area of interest, or move the directional buttons on the front panel to position the red square. The selected area is magnified.
4. To exit digital zoom, right-click the mouse.

## Configuring live view

You can modify the live view set up from the main menu to suit different needs, such as the different monitors, multiview layout, and dwell time options. You can also enable audio output.

Figure 18: Layout window



Table 10: Description of the layout window

Submenu name	Description
<b>General tab</b>	
1. Video Output Interface	VGA/HDMI monitor is displayed. VGA and HDMI output from the same port.
2. Window Segmentation	Select which multiview layout will be default in live view mode. Default is 1 × 1 multiview layout for the 4-channel, 8-channel, and 16-channel NVR.
3. Dwell Time	Set the length of time for which a camera image is displayed on the selected monitor before moving to the next camera during sequencing. Default is off ("No switch").
4. Enable Audio Out	Check the box to enable/disable audio output. Default is disable.
5. Event Output	Designates which monitor will be the output to show the event. Default is HDMI.
6. Event Full Screen Monitoring Dwell Time(s)	Set the length of time for which an event appears on the output monitor before moving to the next camera during sequencing. Default is 10 seconds.
7. Alarm Full Screen Monitoring Dwell Time(s)	Set the length of time for which an alarm appears on the output monitor before moving to the next camera during sequencing. Default is 10 seconds.

### To set up the display options:

1. From the menu toolbar, click **Display Mode Settings > Layout > General**.
2. Specify the desired settings for each of the menu options.
3. Click **Apply** to save the settings.
4. Click **Back** to return to live view.

## Changing the camera sequence

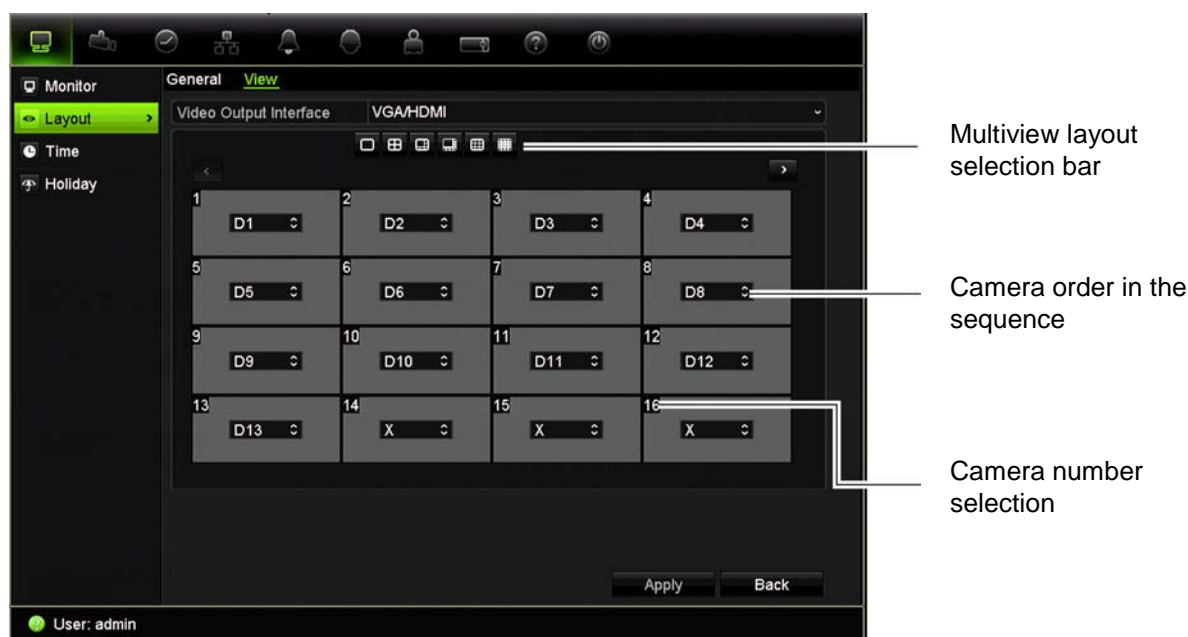
The cameras are sequenced in numeric order by default. You can change the sequence order of the cameras for all monitors.



You can switch the channel of a camera with that of another camera in the system. This lets you, for example, have the images of camera 1 appear on channel 10, and the images of camera 10 appear on channel 1. This feature is useful when you want to watch the sequence of images from specific cameras so that they are next to each other on-screen.

See Figure 19 below. Each video tile displays both the order of the camera in the sequence and the camera number.

**Figure 19: Camera layout and sequence window**



### To set the camera sequencing:

1. From the menu toolbar, click **Display Mode Settings > Layout > View**.
2. From **Video Output Interface**, select the desired monitor from the drop-down list.
3. From the multiview layout selection bar, select the desired multiview layout.
4. Select the video tile of the camera whose order you want to change. The selected tile is highlighted green. Select the new camera sequence order by scrolling through the list of available camera numbers.

**Note:** "X" means that the camera is not displayed.

5. Click **Apply** to save the settings.
6. Click **Back** to return to live view.

# General settings

Use this window to configure the monitor image, GUI language, login password requirement, monitor resolution as well as to configure the NVR name and address. See Figure 20 below.

The NVR can support NTSC or PAL video output. The video format is auto detected. The changes are immediately implemented once “Apply” is clicked to save the settings.

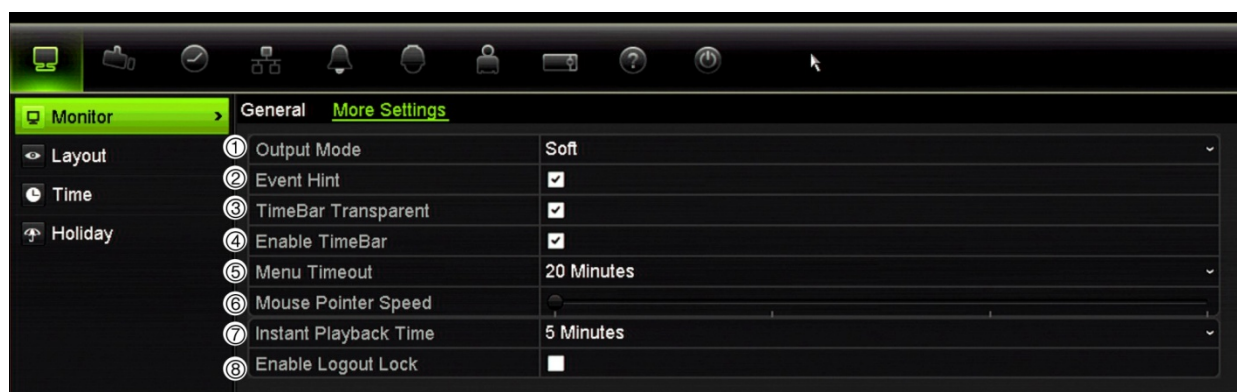
Figure 20: Monitor setup window: General Settings



Table 11: Description of the Monitor setup window: General Settings

Option	Description
1. Language	Change the language of the system. Select the desired language from the drop-down list and click <b>Apply</b> . The language displayed changes immediately.
2. Device Name	Define the NVR name. The default name is TVN 10. Click the edit box and enter the new name from the soft keyboard.
3. Device Address	The device number to use for the NVR when programming the remote control. The default value is 255.
4. Resolution	Define the monitor resolution. Select one of the options from the drop-down list and click <b>Apply</b> . The selected resolution must be the same as that of the monitor.
5. Password Required	Define whether a login password is required. Check the box to enable/disable and click <b>Apply</b> .
6. Enable Wizard	Define whether the wizard tool starts when the NVR is turned on. Check the box to enable/disable and click <b>Apply</b> .
7. Display Status Icons	Define whether the status icons are displayed.

**Figure 21: Monitor Setup window: More Settings**



**Table 12: Description of the Monitor Setup window: More Settings**

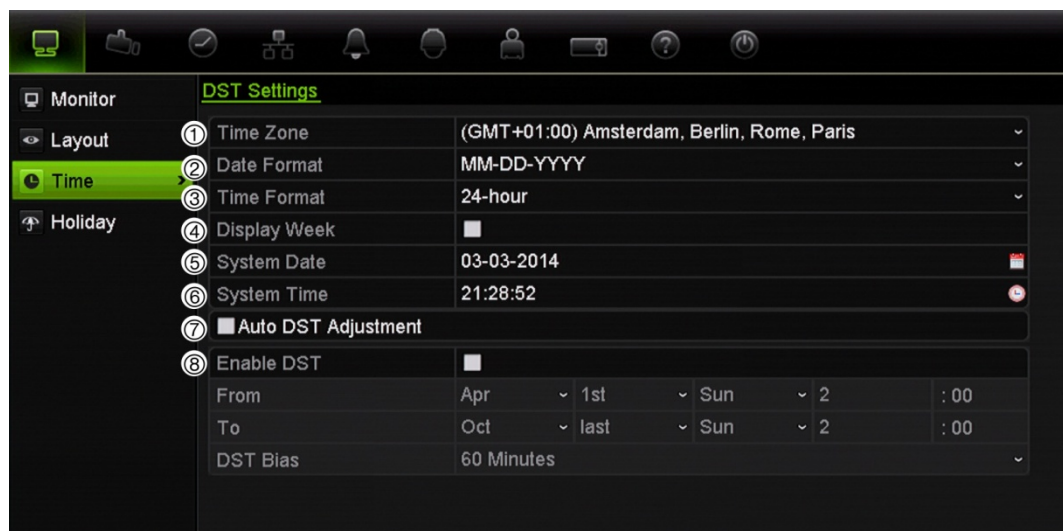
Option	Description
1. Output Mode	Define the desired output mode.  Select one of the options from the drop-down list: Standard, Bright, Soft, or Vivid.
2. Event Hint	Define whether the event hint icon appears on-screen. See “Status information” on page 72 for more information.
3. TimeBar Transparent	Modify the transparency of the menus on-screen relative to the background to make the menu screens easier to read or less prominent on-screen. Default is non-transparent.  Select one of the options from the check box.  Check the box to enable or disable and click <b>Apply</b> .
4. Enable TimeBar	Enable/disable the Time Bar in live view mode.
5. Menu Timeout	Define the time in minutes after which the menu window reverts to live view mode.  Select a time from the drop-down list and click <b>Apply</b> .
6. Mouse Pointer Speed	Modify the speed of the mouse pointer.  Adjust the scroll bar point to the desired level and click <b>Apply</b> .
7. Instant Playback Time	Modify the instant playback replay period. The time options are between 5 and 30 minutes from the actual time. Default is five minutes
8. Enable Front Panel Lock	When the system is logged out, the front panel is automatically locked immediately. To unlock the front panel, press the <b>Live</b> button for 5 seconds.

## Configuring time and date

You can set up the date and time that will appear on-screen. It is not included in recordings. This time and date display is separated from the embedded one that appears for each camera (see “Configuring the camera OSD settings” on page 66 for more information on embedded camera time and date).

The start and end time of daylight saving time (DST) in the year can also be set. DST is deactivated by default. See Figure 22 below for the Time settings window.

**Figure 22: Time and date settings window**



**Table 13: Description of the time and date settings window**

Option	Description
1. Time Zone	Select the time zone of the NVR from the drop-down list.
2. Date Format	Select the date format from the drop-down list. Default format is MM-DD-YYYY.
3. Time Format	Select the time format from the drop-down list. Default format is 24-hour format.
4. Display Week	Display the day of the week in the monitor time bar. Check the box to enable/disable. Default format is Disable.
5. System Date	Define the system date. Default date is the current date.
6. System Time	Define the system time. Default time is the current time.
7. Auto DST Adjustment	Define DST is automatically. It depends on the time zone selected. Default format is Disable.
8. Enable DST	Manually define DST. If this option is selected, the Auto DST adjustment option is disabled. Default format is Disable. Click the check box to enable or disable daylight savings time (DST).
From	Enter the start date and time for daylight savings.
To	Enter the end date and time for daylight savings.
DST Bias	Set the amount of time to move DST forward from the standard time. Default is 60 minutes.

**To set up the system time and date:**

1. From the menu toolbar, click **Display Mode Settings > Time**.
2. Modify the settings to the desired values.
3. Click the **Apply** button to immediately implement the changes.


# Chapter 11

## Controlling a PTZ camera

You can control PTZ dome cameras using the buttons on the front panel, the keypad, and IR remote control as well as using the PTZ control panel accessed with the mouse. Access to PTZ commands may require a password.

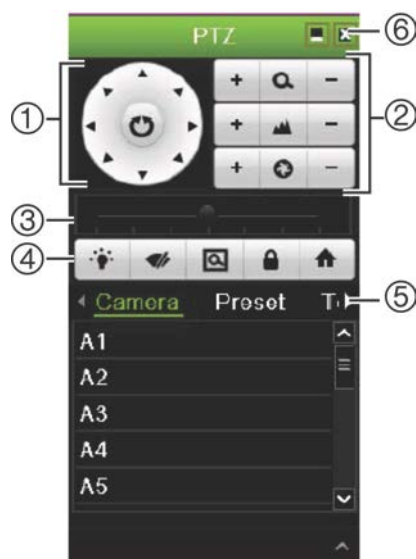
### Calling up presets, tours and shadow tours

When in live view you can quickly call up the list of existing presets, preset tours, and shadow tours by using the front panel, remote control, mouse, and keypad.






Front panel	Press Enter. PTZ control panel appears.
Mouse	Left-click the mouse on the desired camera image. The quick access toolbar appears. Click the PTZ control icon to enter PTZ mode. The PTZ control panel appears.
Remote control	Press the OK button. The PTZ control panel appears.
Keypad	Press the Enter  button on the keypad. Refer to the keypad user manual for further information.

If the display is in multiview format, it changes to full-screen format for the selected camera. See Figure 23 below for a description of the PTZ control panel.

**Figure 23: PTZ control panel**



**Table 14: Description of the PTZ control panel**

Name	Description
1. Directional pad/auto-scan buttons	Controls the movements and directions of the PTZ. Center button is used to start auto-pan by the PTZ dome camera.
2. Zoom, focus and iris	Adjusts zoom, focus and iris.
3. PTZ speed	Adjusts the speed of PTZ movement.
4. Toolbar	<div>  Turns on/off camera light. This command is not supported on all PTZ cameras. </div> <div>  Turns on/off camera wiper. This command is not supported on all PTZ cameras. </div> <div>  Zoom area. </div> <div>  Centers the PTZ dome camera image. Not all PTZ cameras support this command. </div> <div>  Jumps to the home position. </div>
5. Select PTZ command	Displays the desired function from the scroll bar: camera, preset, preset tour, or shadow tour.
6. Exit	Exits the PTZ control panel.

## Setting and calling up presets

Presets are previously defined locations of a PTZ dome camera. It allows you to quickly move the PTZ dome camera to a desired position. They are configured and modified from the PTZ configuration window (see Figure 24 below).

**Note:** The PTZ dome camera used must be able to support a preset command.

Figure 24: PTZ configuration window

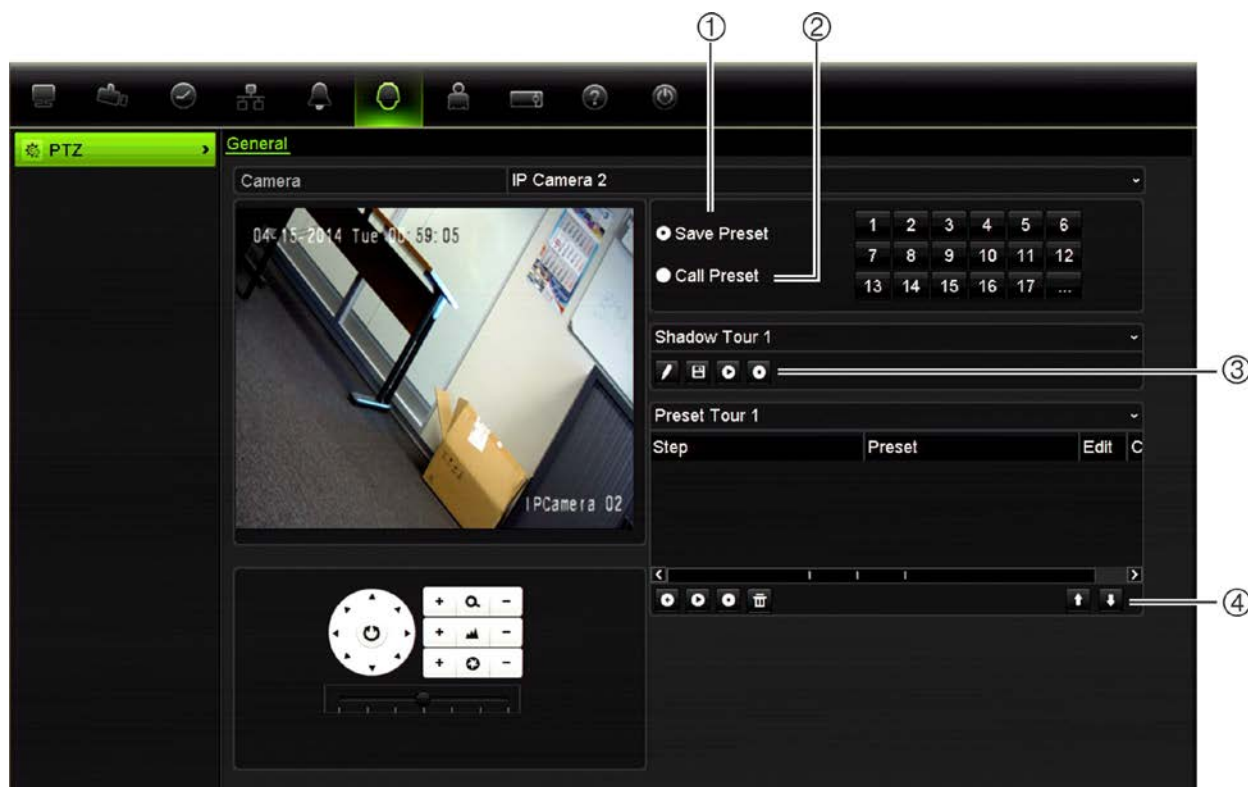












Table 15: Description of the PTZ configuration window

Name	Description
1. Save Preset	Saves preset.
2. Call Preset	Calls up pre-existing preset.
3. Shadow Tour toolbar	 Start recording the shadow tour.
	 Save the shadow tour.
	 Start the selected shadow tour.
	 Stop the selected shadow tour.
4. Preset Tour toolbar	 Add a step to a selected preset tour.
	 Start the selected preset tour.
	 Stop the selected preset tour.
	 Delete all the preset tour steps.
	 Scroll up the preset list.
	 Scroll down the preset list.

### To set up a preset:

1. From the menu toolbar, click **PTZ Settings > PTZ**.
2. Use the directional, zoom, focus, and iris buttons to position the camera in the desired preset location.



3. Check **Save Preset** and select a preset number. The preset is enabled and stored in the camera.

If the desired preset number is larger than the 17 numbers listed, click [...]. The Preset window appears. Select a preset number by scrolling through the list of available presets and click the **OK** button to save changes.

**Note:** Presets can be overwritten.

4. Click **Back** to return to live view.

#### To call up a preset:

- **PTZ control panel:**

1. In live view left-click the mouse and select the PTZ control icon in the quick access toolbar. The PTZ control panel appears. Select the desired camera from the toolbar.

– Or –

On the front panel, select the desired camera and press **Enter** to call up the quick access toolbar. The PTZ control panel appears.

2. Scroll the toolbar to **Preset** and double-click the desired preset in the list. The camera immediately jumps to the preset position.

- **Menu toolbar:**

1. From the menu toolbar, click **PTZ Settings > PTZ**.
2. Check **Call Preset** and enter the preset number to call up. The camera immediately moves to that preset position.
3. Click **Back** to return to live view.

## Setting and calling up preset tours

Preset tours move a PTZ dome camera to different steps. The camera stays at a step for a set dwell time before moving on to the next step. The steps are defined by presets (see “Setting and calling up presets” on page 85).


Each preset tour consists of steps. A step consists of a step number, a dwell time, and a speed.

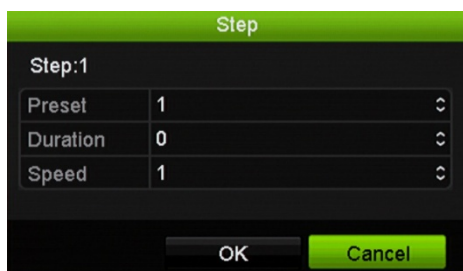
The step number is the order the camera will follow while cycling through the preset tour. The dwell time is the length of time for which a camera stays at a step before moving to the next one. The speed is the rate at which the camera will move from one key point to the next.

**Note:** The PTZ dome camera used must be able to support a preset tour command.

#### To set up a preset tour:

1. From the menu toolbar, click **PTZ Settings > PTZ**.
2. Select the preset tour number.

3. In the preset tour toolbar, click  to add a step to the preset tour. The Step pop-up window appears. Select the preset number, dwell time, and speed of the step. Click **OK** to save the settings.




The image shows a 'Step' configuration window with a green header. It contains a table for 'Step:1' with three rows: 'Preset' with value '1', 'Duration' with value '0', and 'Speed' with value '1'. Each row has a dropdown arrow on the right. At the bottom are 'OK' and 'Cancel' buttons.

Step	
Step:1	
Preset	1
Duration	0
Speed	1
<div>OK Cancel</div>	

**Note:** A preset tour should have at least two presets.

4. Repeat step 3 to configure other steps in the preset tour.
5. Click **Back** to return to live view.

#### To delete a preset tour:

1. From the menu toolbar, click **PTZ Settings > General**.
2. From the preset tour list, select a tour number and click  to delete the preset for the selected the preset tour.

– Or –

In the preset tour toolbar, click  to delete all the presets for the selected tour.

3. Click **Back** to return to live view.

#### To call up a preset tour:

##### • **PTZ control panel:**



1. In live view, left-click the mouse and select the PTZ control icon in the quick access toolbar. The PTZ control panel appears. Select the desired camera from the toolbar.

– Or –

On the front panel, select the desired camera and press **Enter** to call up the quick access toolbar. The PTZ control panel appears.

2. Scroll the toolbar to **Tour** and double-click the desired preset tour from the list. The camera immediately carries out the preset tour movement.

##### • **Menu toolbar:**



1. From the menu toolbar, click **PTZ Settings > PTZ**.
2. Select the desired preset tour from the list and click  to start the preset tour. Click  to stop the preset tour.
3. Click **Back** to return to live view.

## Setting and calling up a shadow tour

The shadow tour command remembers the manually-controlled PTZ dome camera movement track. One shadow tour can be set up for each PTZ dome camera.

**Note:** The PTZ dome camera used must be able to support a shadow tour command.

### To set up a shadow tour:

1. From the menu toolbar, click **PTZ Settings > PTZ**.
2. Select the shadow tour from the list.
3. To record a new shadow tour, click  and use the directional buttons on the PTZ control panel to move the camera along the desired path.
4. Click  to save the shadow tour.

**Note:** The shadow tour can be overwritten.

5. Click **Back** to return to live view.

### To call up a shadow tour:

- **PTZ control panel:**



1. In live view left-click the mouse and select the **PTZ Control** icon in the quick access toolbar. The PTZ control panel appears. Select the desired camera from the toolbar.

– Or –

On the front panel, select the desired camera and press **Enter** on the joystick to call up the quick access toolbar. The PTZ control panel appears.

2. Scroll the toolbar to **Shadow Tour** and double-click the shadow tour from the list. The camera immediately carries out the shadow tour movement.

- **Menu toolbar:**

1. From the menu toolbar, click **PTZ Settings > PTZ**.
2. Select the shadow tour from the list and click  to start the shadow tour. Click  to stop the shadow tour.
3. Click **Back** to return to live view.

# Chapter 12

## Playing back a recording

The NVR lets you quickly locate and play back recorded video. There are four ways to play back video:

- Instant playback of the most recently recorded video
- 24-hour playback of the day's recorded video
- Search the video archives by specific time, events, bookmarks, or snapshots
- Search the system log

The NVR continues to record the live view from a camera while simultaneously playing back video on that camera display. You must have the access privilege to play back recordings (see “Customizing a user's access privileges” on page 114 for more information).

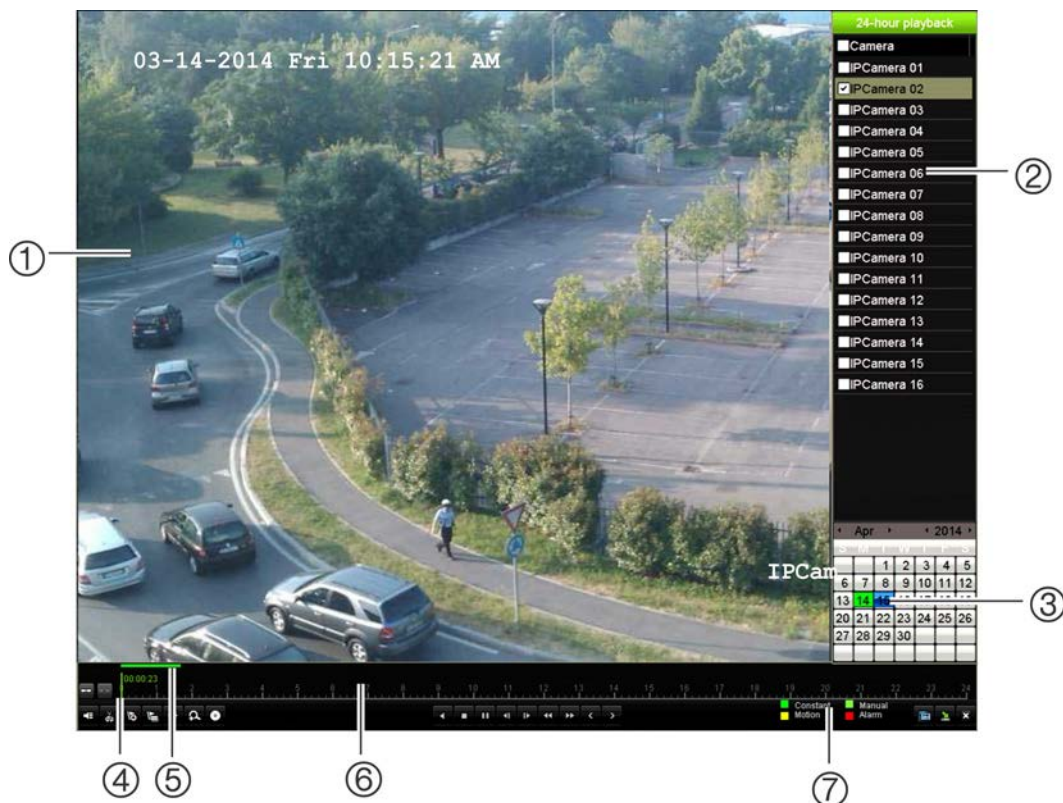
Cameras in multiview mode play back simultaneously. This means, for example, that it is easy to follow the path of an intruder who has passed in front of several cameras.

### Overview of the playback window

It is easy to manage playback from the playback window.

The playback video can be set up to display a time/date stamp for evidentiary purposes (see “Configuring the camera OSD settings” on page 66).

**Figure 25: Playback window (24-hour playback shown)**



1. Playback viewer.
2. **Camera panel.** Select the cameras for playback. Move the mouse over the area to display the list of cameras available.
3. **Calendar panel.**  
Blue: Current date  
Green/Yellow/Red: Recordings available on the NVR.
4. **Time bar:** Time of actual playback. This is only displayed in 24-hour playback.
5. **24-hour playback progress bar:** This bar displays how much of the 24-hour period has been recorded.
6. **Playback control toolbar.** See Figure 26 on page 92 for more information.
7. **Recording type:** Description of the color coding of recording types that appear in the playback progress bar. Green indicates constant recording. Red indicates alarm recording. Yellow indicates motion recording. Pale green indicates manual recording.

## The playback control toolbar

It is easy to manually control playback using the playback control toolbar. See Figure 26 on page 92 below.

**Note:** The playback control toolbar does not appear for instant playback.

**Figure 26: Playback control toolbar (Search playback example shown)**



Item	Description
1.	<b>Audio and video control toolbar:</b> <ul style="list-style-type: none"> <li> /  Audio on/off.</li> <li> /  Start/stop a video clip during playback. Sections of a recording can be saved to an external storage device.</li> <li> Add default bookmark.</li> <li> Add customized bookmark.</li> <li> Bookmark management. Click to see the list of bookmarks and their times. They can be renamed or deleted.</li> <li> Digital zoom. Click to enter the digital zoom function. Click again to exit. See “Digital zoom in playback” on page 102 for more information.</li> <li> Archive files.</li> </ul>
2.	<b>Playback control toolbar:</b> <ul style="list-style-type: none"> <li> Reverse play the recording. Click again to pause.</li> <li> Stop playback. Time displayed is 00:00:00.</li> <li> Play recording.</li> <li> Fast forward playback by the configured skip time (default is 30 seconds).</li> <li> Reverse playback by the configured skip time (default is 30 seconds).</li> <li> Decrease playback speed: Options available are: 1/2 speed, 1/4 speed, 1/8 speed, single frame.</li> <li> Increase playback speed. Options available are: 2X speed, 4X speed, 8X speed, 32X speed.</li> <li> Play previous file/day/event recording.</li> <li> Play next file/day/event recording in the search result.</li> </ul>
3.	<b>Recording type:</b> Description of the color coding of recording types that appear in the playback progress bar. Green indicates continuous recording. Red indicates alarm recording. Yellow indicates motion recording. Pale green indicates manual recording.
4.	Call up the Search window to search for recorded video files.
5.	Hide the playback control toolbar.
6.	For 24-hour playback mode, quit playback and return to live view. For playback from search mode, quit playback and return to the search window.
7.	<b>Playback bar:</b> This bar displays the playback recording. It indicates in color the type of recording.

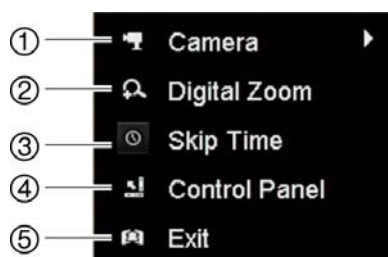
Item	Description
8.	<p><b>Timeline:</b> Allows you to jump forwards or backwards in time. The timeline moves left (oldest video) to right (newest video). Click a location on it for where you want playback to start.</p> <p>In 24-hour playback the cursor shows the actual time.</p> <p>In search playback the cursor is a ball. The actual playback time of the ball position and how much playback has already played are also displayed.</p>

## Playback pop-up menu

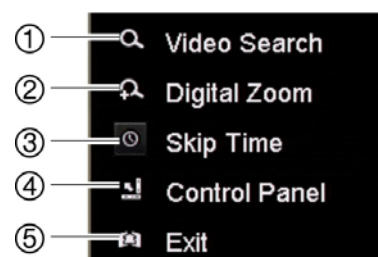
You can quickly access playback functions by placing the cursor on a playback image on-screen and clicking the right-button of the mouse. The playback pop-up menu appears (see Figure 27 below).

**Figure 27: The playback pop-up menus**

**24-hour playback:**



**Search result playback:**




Name	Description
1. Camera	Select a camera for playback.
Video Search	Return to the Search window.
2. Digital Zoom	Enter the digital zoom function for the selected camera. See “Digital zoom” on page 77 for more information.
3. Skip Time	Modify the playback skip time. See “Playback speed and skip time” on page 95 for more information.
4. Control Panel	Hide or display the playback control toolbar.
5. Exit	Return to live view or video search.

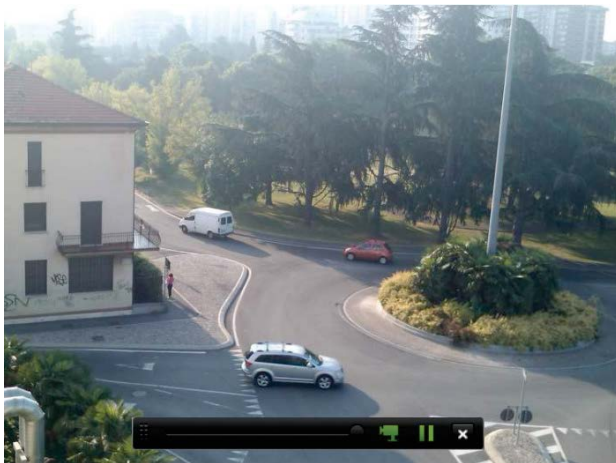
## Instant playback




Use the quick access toolbar to quickly replay recorded video the last programmed period (default time is five minutes). This can be useful to review an event that has just happened. Only one camera at a time can be selected.

### To instantly replay recorded video:

1. In live view mode left-click the mouse on the desired camera image. The quick access toolbar appears. Click **Instant Playback**.
2. Click the Channel icon  and select the desired camera from the drop-down list. Click **OK**.

Playback starts immediately. The Instant Playback scroll bar appears under the selected camera.



3. Click **Pause**  on the toolbar to pause playback.  
Click **Play**  to restart playback.  
Click **Stop**  to stop playback and return to live view.

## 24-hour playback

Use this option to play back recorded video from the past 24 hours. Playback starts at midnight and runs for the 24-hour period. All-day playback is shown in full-screen view. See Figure 27 on page 93 for a description of the playback control toolbar.

### • Using the mouse:

1. In live view mode right-click the mouse on the desired camera image. In the mouse toolbar click 24-hour **Playback**.

The playback screen appears. By default, the camera is in full-screen mode.

2. To select more than one camera for multiview playback or to select playback from a different day, move the mouse to the right edge of the screen. The camera list and calendar appear. Check the desired cameras and/or another day. Up to 8 cameras can be selected.

Playback starts immediately.

**Note:** A message appears if there are no recordings found during this period.

3. Use the playback control toolbar to manually control playback.



4. Click **Exit**  to return to live view.

– Or –

Right-click the mouse and click **Exit** from the mouse menu to return to the previous window.

• **Using the front panel:**

1. Select the camera for playback and press the **Play** button. Playback from the selected camera starts immediately.

**Note:** Multiview playback is only available using the mouse. If live view was showing multiview, only the camera in the top-left channel on screen will be played back.

2. To select a different camera for playback, press the numerical button of the desired camera.
3. Press **Live** to return to live view.

## Playback speed and skip time

Use the direction buttons on the front panel to modify the playback speed, and to jump forwards or backwards.

**To change the playback skip time period:**



1. In playback mode, right-click the mouse and click **Skip Time** on the pop-up menu. The Skip Time menu appears.
2. Select a skip time between 10 and 300 seconds. The default skip time is 30 seconds.

**To change the playback speed:**

*From the front panel:*

Press the left and right buttons to speed up and slow down recorded video.

*From the playback window:*

Click  and  to speed up and slow down recorded video.

**To skip forwards or backwards during playback:**

*From the front panel:*

Press the up and down buttons to jump recorded video forwards and backwards by a set skip time.

*From the playback window:*

Click  and  to jump recorded video forwards and backwards by a set skip time.

— Or —

Click a location on the timeline for where you want playback to start.

# Searching recorded video

You can easily search and play back recorded videos by time, events, bookmarks, and snapshots.

The Search window has four submenus that allow you to carry out different searches by theme:

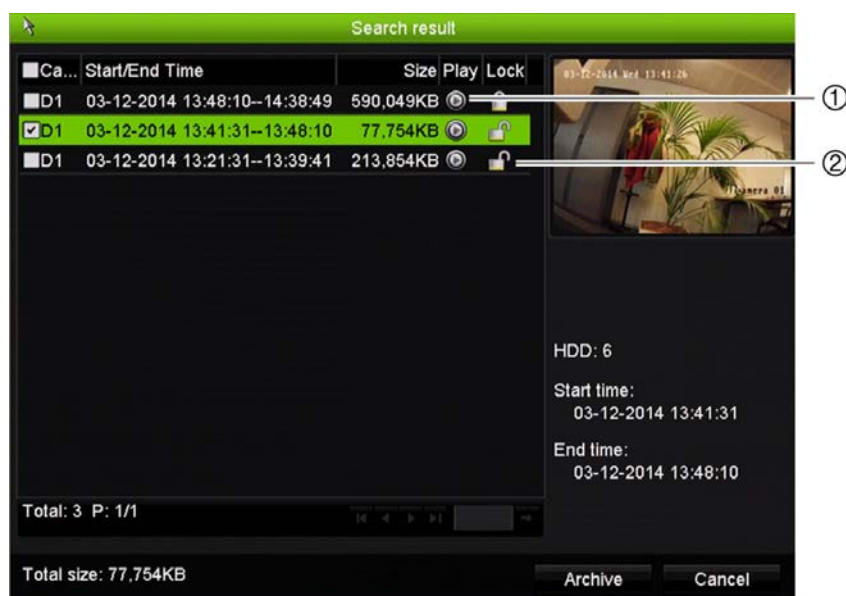
Search type	Description
Normal	Search all recorded video by cameras, recording type, type of file protection (locked or unlocked) and time period.
Event	Search only event recorded files. Files can be searched by alarm inputs or motion detection.  <b>Note:</b> Only motion detection that has been recorded as events will be listed in this search. Motion that is recorded as a non-event can be searched under the Normal menu.
Bookmark	Search only recorded files with bookmarks.
Snapshot	Search snapshots.

## Search results

A search will usually produce a list of files, which may extend to several pages. The files are listed by date and time. The most recent file is listed first. See Figure 28 on page 96 for an example of a search.

Only one file can be played back at a time.

Figure 28: Example of a search result list




1. Click to playback the selected video.
2. Click to lock recording to prevent it from being overwritten.


# Playing back recordings by time and video type

You can search recorded video by time and video type, such as continuous recordings, motion, alarms, and all recordings. Video can be played back simultaneously across several cameras.

## To play back search results:

1. In live view mode, right-click the mouse and select **Advanced Search > Normal**.
2. Select the desired cameras, record type, file type as well as start and end times of the recording.
3. Click **Search**. The list of search results appears.
4. Play back the search results:

If there is only one camera in the search result, click its playback  button. Playback starts.

If there is more than one camera listed, click the playback  button of one of the cameras. In the window that appears, select the cameras you want to play back simultaneously and click **OK**. Playback starts.

5. To hide the playback control toolbar during play back, right-click the mouse and select **Control Panel** from the list. Click again for the panel to reappear.
6. Use the playback control toolbar to manually control playback.
7. To play back another camera, move the cursor to the right edge of the window to display the list of cameras and select the desired camera.
8. To do another search:

Click **Exit**  in the playback control toolbar to return to the search results window.

- Or -

Right-click the mouse and select **Exit** from the list to return to the search results window.

- Or -

Right-click the mouse and select **Video Search** from the list to return to the search window.

- Or -

Click the **Search** icon in the playback control toolbar to return to the search results window.

# Playing back recordings by event


You can search recorded video by event type: motion, and alarm input.


## To play back search results:

1. In live view mode right-click the mouse and in the mouse menu select **Advanced Search > Event**.
2. Select the desired event type as well as start and end times of the recording.
3. Select the desired alarm inputs.

If you selected "Motion" as the event type, select the required IP cameras.

4. Click **Search**. The list of search results appears.
5. Select the desired video from the list.
6. Play back the search results:

If there is only one camera in the search result, click its playback  button. Playback starts.

If there is more than one camera listed, click the playback  button of one of the cameras. Playback starts.

7. To hide the playback control toolbar during playback, right-click the mouse and select **Control Panel** button from the list. Click again for the panel to reappear.
8. Use the playback control toolbar to manually control playback.
9. To play back another event video, move the cursor to the right edge of the window to display the list of event videos and select the desired video.
10. To do another search:

Click **Exit**  in the playback control toolbar to return to the search results window.

- Or -

Right-click the mouse and select **Exit** from the list to return to the search results window.

- Or -

Right-click the mouse and select **Event Search** from the list to return to the search window.

- Or -



Click the **Search** icon in the playback control toolbar to return to the search results window.

# Creating and playing back bookmarked recordings

You can bookmark the important scenes in a recorded file for later reference.

Bookmarks flag the start of a scene. Up to 64 bookmarks can be saved in a video file.

There are two types of bookmarks:


- **Default bookmark** : All default bookmarks have the same generic name, "BOOKMARK".
- **Customized bookmark** : The bookmark is given a name for easy identification. The same name can be used for several bookmarks.

Both types can be searched.

## To create a bookmark:

1. Open a 24-hour playback window or the playback window from a search result.
2. In the all-day playback recording, click the timeline bar where you want the bookmark to be. The green time line jumps to this position. Click the button for the type of bookmark you want, and enter the bookmark name if required.

In the playback recording from a search, click the scroll bar where you want the bookmark to be. The scroll bar ball jumps to this position. Click the button for the type of bookmark you want, and enter the bookmark name if required. The bookmark is saved.

3. Click the bookmark management  button to see the list of bookmarks saved. The name of a bookmark can be edited. The bookmark can also be deleted.

## To play back a bookmark:

1. In live view mode, right-click the mouse and select **Advanced Search > Bookmark** in the mouse menu.
2. Select the desired cameras as well as start and end times of the recording to be searched. Also select the type of bookmark to be searched.

If searching for customized bookmarks, enter a keyword from the bookmark name.


Click **Search**. The list of bookmarks appears.


3. Select the desired bookmark from the list.
4. Select a bookmark and do one of the following:  
Click the **Edit** button to edit a bookmark's name.  
- Or -  
Click the **Delete** button to delete a bookmark.  
- Or -  
Click the **Play** button to play back a bookmark.
5. When finished, click **Exit**.

## Slideshow of snapshots

You can search video snapshots. See “Accessing frequently used commands” on page 75 on how to create snapshots.

### To play back snapshot search results:

1. In live view mode, right-click the mouse and in the pop-up menu select **Advanced Search > Snapshot**.
2. Select the desired cameras as well as start and end times of the recording to be searched.
3. Click **Search**. The list of snapshots appears.
4. Select a snapshot to see it in the thumbnail window. Click its **Play**  button to see it in full-screen mode.
5. When in full-screen mode, move the cursor to the right edge of the window to see the complete list of snapshots found in the search. Click their Play buttons to see them in full-screen mode.
6. To see a slideshow of all the snapshots found, click the ► or ◀ buttons on the snapshot toolbar to sequence forwards or backwards through the shots.
7. To do another search:

Click **Exit**  in the snapshot toolbar to return to the search results window.

- Or -

Right-click the mouse and select **Exit** from the list to return to the search results window.

- Or -

Right-click the mouse and select **Snapshot Search** from the list to return to the search window.

- Or -

Click **Search** in the snapshot toolbar to return to the search window.

## Playing back recordings from the system log

You can also playback recordings from the system log. The system log provides a much wider range of options for playback than Advanced Search, which deals with video detection and alarms only.

See “Searching system logs for events” on page 111 for more information.

### To play back video from the system log:

1. From the menu toolbar, click **System Settings > Log Search**.
2. Select the search start and end times.
3. Under **Major Type** and **Minor Type**, select an option from the drop-down list. The minor type list of options available depends on the option selected under major type.
4. Click the **Search** button. A list of results appears.
5. Select a file and click:
  - **Details**: Displays information on the log or recording. For a recording, it lists such information as start time, type of information, camera number, and gives a description on the types of events recorded and when record time was stopped.
  - **Play**: Click to start playback of the selected recording.
  - **Export**: Click to archive the selected file to a USB device. The export window appears.
  - **Back**: Click to return to live view.


## Playing back frame-by-frame

You can easily play back a selected video at different speeds. This allows you to carefully examine an event frame-by-frame as it happens.

The current frame rate is shown on the right of the playback control toolbar.

### To play back frame-by-frame:

#### • Using a mouse:

1. In playback mode click the **Speed Down**  button in the playback control toolbar until the speed changes to single frame.
2. Click the **Pause** button to advance the video frame by frame.

#### • Using the front panel:

1. In playback mode move the left direction button to left to scroll down through the speed changes until single frame.
2. Press **Enter** to advance the video frame by frame.

## Digital zoom in playback

You can easily zoom in on an image during playback to see it in greater detail. There are two ways to do digital zoom in playback.

### To digitally zoom-in during playback:

1. In playback mode, right-click the mouse and select **Digital Zoom** in the pop-up menu.

— or —

Click the Digital Zoom icon in the playback control toolbar.

The playback control toolbar disappears. The digital zoom window appears.

2. Left-click the mouse and drag the red square in the digital zoom window to the area of interest, or move the joystick on the front panel to position the red square. The selected area is magnified.
3. Right-click the mouse to quit the digital zoom mode and return to full-screen playback mode. The playback control toolbar reappears.



# Chapter 13

## Archiving recorded files

Archive recorded files on an external device such as a USB flash drive, USB HDDs, or an external USB CD/DVD burner. Files can also be archived remotely to a web browser, or an SDK such as TruVision Navigator.

You can archive up to 12GB in file size or 24 hours of video.

If using a backup device, ensure that it is connected to the NVR before starting to archive files. The device can be detected automatically by the NVR.

### Archiving files

There are two ways to archive files:

**Quick Archive:** Quick archive lets you archive recorded files quickly by using the Archive button on the front panel. The NVR then downloads all the recorded files on the unit to fill the available memory space on the media. This option is not available via the mouse.

**Advanced Search screen:** You can specify archiving settings such as a specific time and date period, recording type, start and end times, as well as cameras.

### Using Quick Archive

**To archive recorded video using Quick Archive:**

1. Insert the backup device into the NVR.

If using a USB flash drive or memory device, insert the device into the USB port on the front panel. If more than one media type is found in the TVN 10, the USB device takes precedence over the others.

2. Press **Archive** on the front panel or remote control to open the quick archive window.
3. Click **Start**. The unit starts to download all the files listed.

**Note:** If there is a capacity limitation on the backup device, only the most recent files will be backed up.

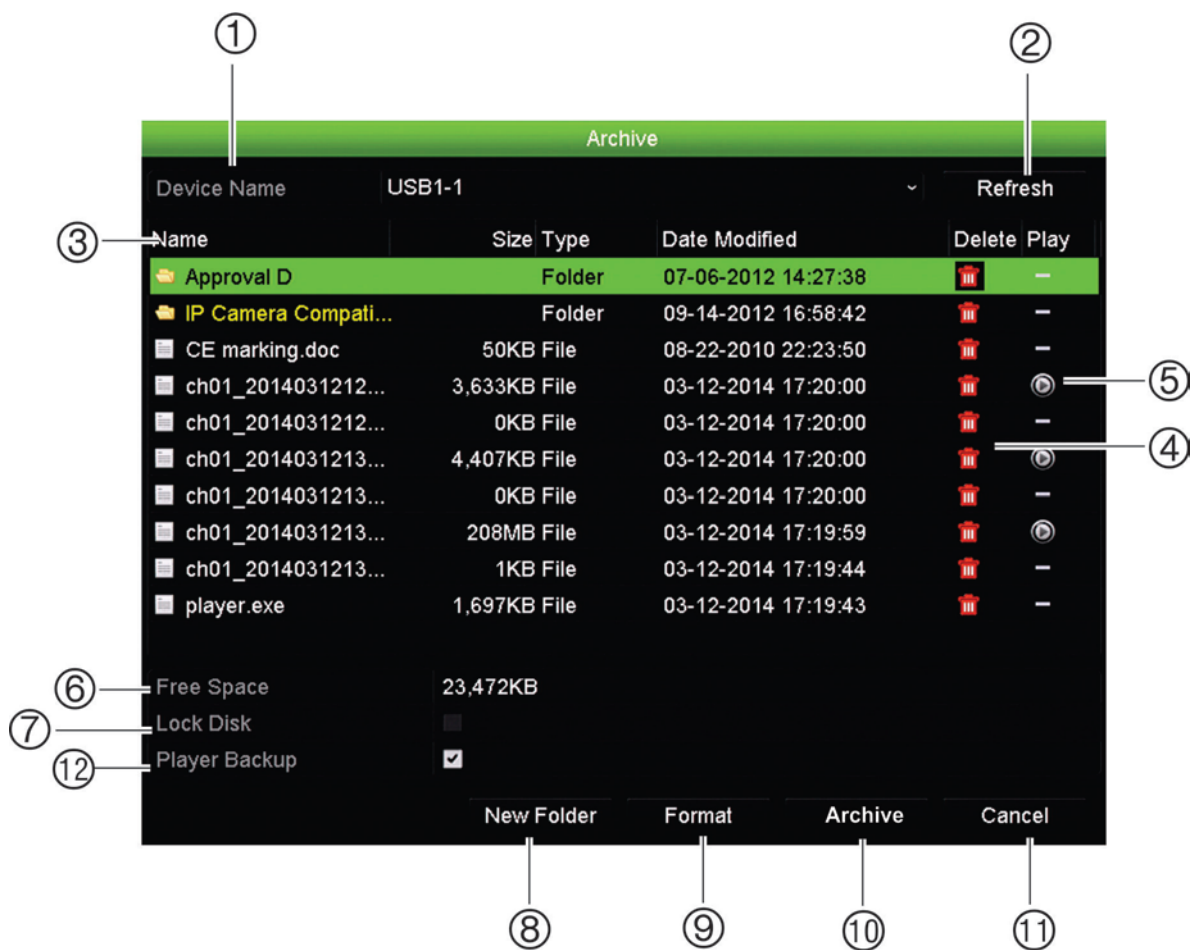
A message will appear to confirm when the download is complete.

## Exporting recorded files to a backup device

You can insert a mini-USB hub to the USB port to attach a mouse for navigation or a USB drive for archiving. However, the unit may not support all types of USB hubs.

The archive options available may depend on the type of backup device selected.

Figure 29: Example of an archive window



Function	Description
1. Device name	The storage media used for archiving is shown. If the backup device is not recognized: <ul style="list-style-type: none"> <li>• Click the Refresh button</li> <li>• Reconnect device</li> <li>• Check for compatibility from vendor</li> </ul>
2. Refresh	Refresh the search results if any parameters have been modified.
3. Name	Files found on the backup device are listed.
4. Delete	Click to delete a selected file from the backup device.
5. Play	Click to play selected file.

	Function	Description
6.	Free Space	Free space available on the backup device is displayed.
7.	LockDdisc	Select to prevent other files being recorded onto the disc.
8.	New Folder	Create a new folder on the backup device. Files from the NVR can be archived to a specific folder.
9.	Format	Format the USB drive.
10.	Archive	Start downloading selected files onto the backup device.
11.	Cancel	Cancel archive and return to the previous menu.
12.	Player Backup	Select to include a backup player.

### To export recorded files to a backup device:

1. Connect the backup device to the NVR.  
If using a USB flash drive or memory device, insert the device into the USB port on the front panel.
2. In live view mode, press the **Search** button on the front panel or remote control.  
- Or -  
Right-click the mouse and select **Advanced Search**.  
The Advanced Search window appears.
3. Select the cameras and search parameters required.  
**Record type:** All, Constant, Motion, Alarm, or Manual.  
**File type:** All, Locked, or Unlocked.
4. Select the desired start and end times and dates for the recordings.
5. Click **Search**. The list of results appears.
6. Select the files to export.  
**Note:** You can click the Play button to verify that the selected files are the files to export.
7. Click **Archive**. The Archive window appears.
8. Select the storage medium to export from the drop-down list.
9. Click **Archive** to begin the backup process.
10. Click **OK** when archiving is completed. Click **Cancel** until you return to live view.

## Creating and archiving video clips



You can save important scenes in a recorded file for later reference by creating video clips of selected portions of the file during playback. When an intruder, for example,

crosses in front of several cameras you can save the video clip of the intruder's path across these cameras in a single file.

Up to 30 video clips can be made from a recording.

**Note:** This feature is only available using the mouse.

#### **To export video clips during playback:**

1. Connect the backup device to the NVR.
2. Search for the required files to play back. See “Searching recorded video” on page 96.
3. Select the file or files to play back and click **Play**. Playback starts immediately.
4. Click the playback timeline where you want the video clip to start and click the **Start Clip**  button.
5. Click the playback timeline where you want the video clip to stop and click the **End Clip**  button.
6. Repeat for additional clips.
7. Exit playback mode. A message appears asking if you want to save the video clips.
8. Click **Yes** to archive the clips. The Export window appears.  
Click **No** to exit and return to the previous window. The clips are not saved.
9. In the Archive window, select the backup device to be used from the drop-down list.
10. Click **Archive**. File downloading starts.

**Note:** You can create a new folder for the video clips. Press the **New Folder** button and enter the folder name.

## **Archiving snapshots**

You can save all the video snapshots recorded to a backup device.

#### **To archive snapshots:**

1. Connect the backup device to the NVR.
2. Search for the required snapshot files to play back. See “Slideshow of snapshots” on page 100. The list of snapshots appears.
3. Select the snapshots to backup.
4. Click **Archive**. Select the archiving device, if different from that listed.
5. Click **Archive**. Export starts immediately.
6. When completed, click **OK**. Click **Cancel** to return to the previous window.

## Managing backup devices

You can manage backup devices from the Archive window (see Figure 29 on page 104.)

The Export window allows you to:

- **Create New Folder:** Create a new folder on the backup device.
- **Delete:** Delete a file or folder from the backup device.
- **Play:** Play the selected video file from the backup device.
- **Format:** Format the backup device.
- **Erase:** Erase files from a re-writable CD/DVD.

## Playing back archived files on a PC

Use the standard file player software to play back the archived video on your PC. It is downloaded from the NVR when archiving files onto a backup device.

# Chapter 14

## NVR management

This chapter describes:

- Updating system firmware
- Restoring default settings
- Viewing system information
- Viewing system logs

### Updating system firmware

The firmware on the NVR can be updated using four methods:

- Via a USB device
- Over the network via an FTP server
- Via the NVR web browser
- TruVision Navigator. For further information, refer to the TruVision Navigator user manual.

The firmware upgrade file is labeled *tvn10.dav*.

#### To update the system firmware using a USB device:

1. Download the latest firmware on to a USB from our web site at:  
<http://www.interlogix.com/library>  
- Or -  
[www.utcssecurityproductspages.eu/videoupgrades](http://www.utcssecurityproductspages.eu/videoupgrades)
2. Connect the USB device to the NVR.
3. Click the **System Settings** icon in the menu toolbar.
4. Select **Upgrade > Local Upgrade**. The list of files on the USB is displayed (see Figure 29 on page 104 for an example).
5. Select the file and click **Upgrade**. Click **Yes** to begin the upgrade process.

6. When the upgrade process is completed, the NVR reboots automatically.

#### To update the system firmware via an FTP server:

For engineering purposes only.

## Restoring default settings

#### To restore all parameters to default factory settings:

1. From the menu toolbar, click **System Settings > Configurations**.
2. Click the **Default** tab.
3. Click the **Default** button. Enter the Admin password, click **OK**, and then click **Yes** to confirm that you want to restore all parameters to default.

— Or —

Click the **Restore** tab. Enter the Admin password, click **OK**, and then click **Yes** to confirm that you want to restore all parameters except network settings to default.

**Note:** Network information, such as IP address, subnet mask, gateway, MTU, NIC working mode, server port, and default route is not restored to factory default settings if **Restore** is selected.

## Importing and exporting configuration settings

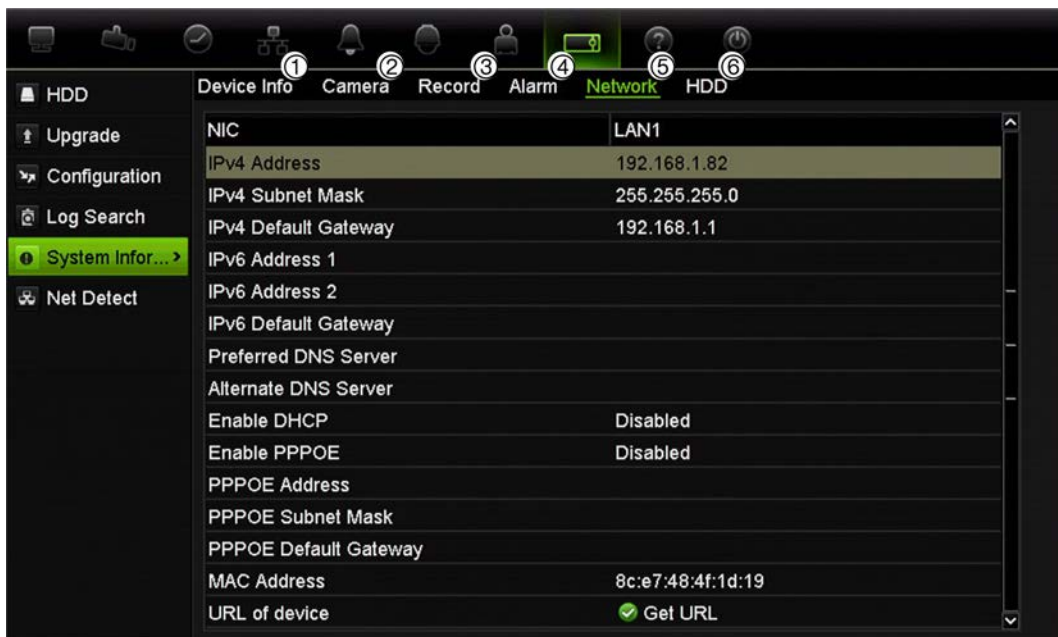
You can export and import configuration settings from a TVN 10. This is useful if you want to copy the configuration settings to another TVN 10, or if you want to make a back up of the settings.

Insert an external storage device in the NVR. Go to the **System Settings > Configurations > Import/Export Config File** to import or export configuration settings. Click **Export** to export the NVR's configuration settings into an external storage device or click **Import** to import configuration settings after selecting a configuration file from the external storage device.

## Viewing system information

You can check the current status of the NVR at any time by going to the System Information menu. You can check the status of the device, cameras, recordings, alarms, network, and HDDs. See Figure 30 on page 110.

Figure 30: System information (Network window shown)



#### To view system information:

1. From the menu toolbar, click **System Settings > System Information**.

2. To view device information, click the **Device Info** tab (1).

You can view the device name, model, serial number, firmware version, and encoding version.

3. To view camera information, click the **Camera** tab (2).

You can view the status of each camera: camera number, camera name, status, motion detection, video tampering, and video loss,

4. To view the recording status and encoding parameters of each camera, click the **Record** tab (3).

You can view camera number, recording status, stream type, frame rate, bit rate (Kbps), resolution, record type, and encoding parameter.

5. To view the alarm information, click the **Alarm** tab (4).

You can view the alarm input and alarm output numbers, alarm name, alarm type, alarm status, and triggered camera.

6. To view network information, click the **Network** tab (5).

You can view the IPv4 address, IPv4 subnet mask, IPv4 default gateway, IPv6 address 1, IPv6 address 2, IPv6 default gateway, preferred DNS server, alternate DNS server, enable DHCP, enable PPPoE, PPPoE address, PPPoE subnet mask, PPPoE default gateway, and MAC address.

7. To view HDD information for each HDD, click the **HDD** tab (6).

You can view the HDD label, status, capacity, free space, property, type, and group.

8. Click **Back** to return to live view.



# Searching system logs for events

Many events of the NVR, such as operations, alarms, and notifications, are logged in the system logs. See Figure 31 below.

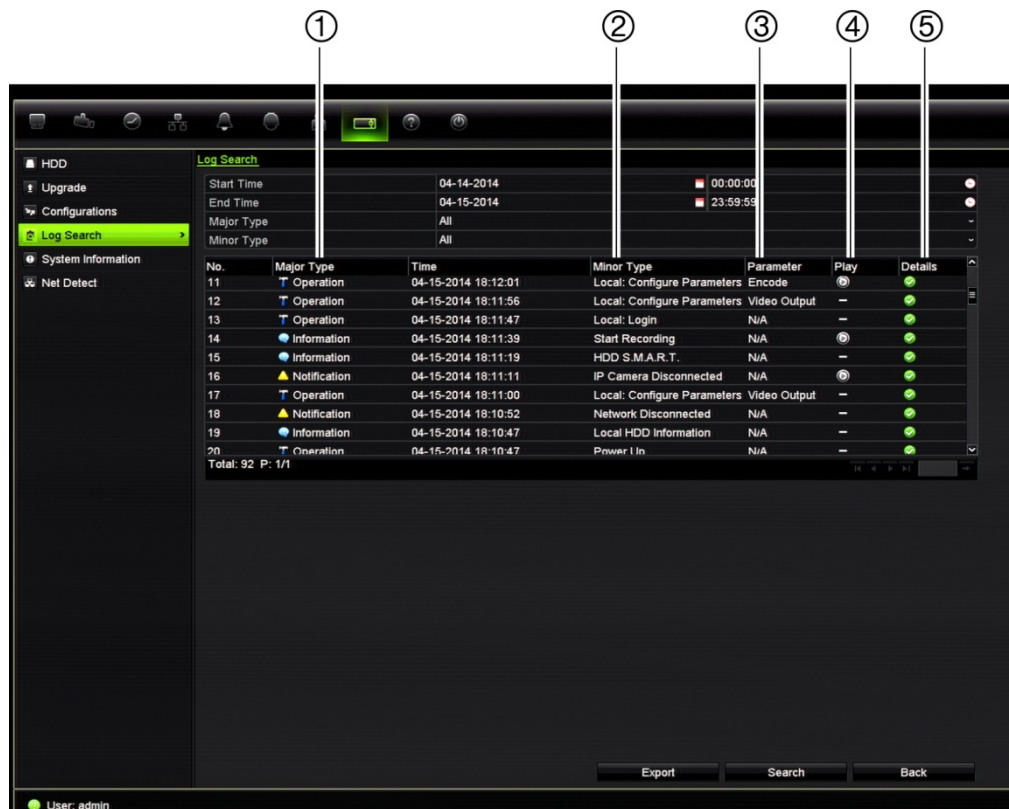
The system log also provides a much wider range of options for playback than Advanced Search, which deals with video detection and alarms only. See “Playing back recordings from the system log” on page 100 for more information.

Logs can be viewed and exported at any time. Up to 2000 log files can be viewed at once.

Log files can also be exported onto a USB device. The exported file is named according to the time it was exported. For example: *20120729124841logBack.txt*.

**Note:** Connect the backup device, such as a USB flash drive, to the NVR before commencing the log search.

Figure 31: View log window





1. Major Type; 2. Minor Type; 3. Parameter; 4. Click to play the recording; 5. Click to obtain details about the log

**Table 16: Major and minor event type categories**

Major Types	Minor Types
All	All
Alarm	Alarm Input, Alarm Output, Start Motion Detection, Stop Motion Detection, Start Video Mask, Stop Video Mask
Notification	Video Loss Alarm, Illegal Login, HDD Full, HDD Error, IP Conflicted, Network Disconnected, Abnormal Record, IP Camera Disconnected, IP Camera Address Conflicted, PoE Power Overload
Operation	Power Up, Local Shutdown, Abnormal Shutdown, Watchdog Reboot, Local Restart, Local Login, Local Logout, Local Configuration Parameters, Local Upgrade, Local Start Manual Recording, Local Stop Manual Recording, Local PTZ Control, Local Lock File, Local Unlock File, Local Trigger Alarm Output, Local Initialize HDD
Information	Local HDD Information, HDD S.M.A.R.T., Start Recording, Stop Recording, Delete Expired Record

**To search and export log files:**

1. Click the **System Settings** icon in the menu toolbar and select **Log search**.
2. Enter the search parameters and click **Search** to begin the search. The logs matching the search criteria are displayed.
3. To view more detail information about a particular log entry, select the entry and click  or double-click the log entry.
5. If available, you can also view the associated video to the selected log entry by clicking its play button .
5. To export a log entry, select a log and click **Export**.
4. Click **Back** to return to live view.

# Chapter 15

## User management

By default the NVR comes with three user accounts: an Administrator account, an Operator account, and a Guest account. These accounts provide multiple levels of access and functionality. See Table 17 below for a description of the different user accounts.

**Table 17: User accounts**

User	Description
<b>Administrator</b>	<p>The administrator account includes extended menu with full access to all settings. The Administrator has the authority to add, delete or configure parameters for many of the system functions.</p> <p>There can only be one administrator.</p> <p>The user name is "admin". The name cannot be modified.</p> <p>The default password is 1234.</p>
<b>Operator</b>	<p>The operator account includes reduced menu access to Video settings (inaccessible features are not visible).</p> <p>The default user name is "operator".</p> <p>The default password is 4321.</p>
<b>Guest</b>	<p>The guest account includes menu access with no programming possibilities (inaccessible features are not visible).</p> <p>The default user name is "guest".</p> <p>The default password is Empty.</p>

**Note:** The default passwords should be changed for security reasons.


## Adding a new user

Only a system administrator can create a user. You can add up to 31 new users.

The access privileges of Operator and Guest users are predefined and can be modified by the administrator.

### To add new users:

1. From the menu toolbar, click **User Management**.
2. Click **Add** to enter the Add User window.
3. Enter the new user's name and password. Both the user name and password can have up to 16 alphanumeric characters.
4. Select the new user's access level: Operator or Guest.
5. Enter the user's MAC address to let the user access the NVR from a remote computer with this MAC address.
6. Click **Apply** to save the settings and **OK** to return to the previous window.
7. Define the user's permissions.

Click the Permission button  for the new user. In the Permission pop-up window check the required access privileges for local, remote and camera configuration. See "Customizing a user's access privileges" below for the permission descriptions for each group.

Click **Apply** to save the settings and **OK** to return to the previous window.

8. Click **Back** to return to live view.

## Customizing a user's access privileges

Only an administrator can allocate access privileges to Operator and Guest users. The access privileges can be customized for each user's needs. The administrator's access privileges cannot be changed.

There are three types of privilege settings: Local Configuration, Remote Configuration, and Camera Configuration.

**Note:** Only the administrator can restore factory default settings and export configuration files.

### Local configuration settings:

- **Local Log Search:** Locally search and view logs of the NVR and view system information.
- **Local Parameter Settings:** Locally configure parameters as well as import configuration files.
- **Local Camera Management:** Locally add, delete, and edit IP cameras.
- **Local Advanced Operation:** Access HDD management (including the initialization and modification of disk properties). Update system firmware as well as manually trigger and clear the I/O alarm output.
- **Local Shutdown/Reboot:** Locally shutdown or reboot the NVR.

### Remote configuration settings:


- **Remote Log Search:** Remotely view logs that are saved on the NVR.
- **Remote Parameter Settings:** Configure parameters as well as import configuration files.
- **Remote Camera Management:** Remotely add, delete, and edit IP cameras.
- **Remote Video Output Control:** Remotely control the video output.
- **Two-Way Audio:** Use two-way audio between the remote client and the NVR.
- **Remote Alarm Control:** Remotely trigger and clear the I/O alarm output. Alarm and notification settings must be configured properly to upload to host.
- **Remote Advanced Operation:** Remotely manage HDDs (initializing and setting properties for HDDs) as well as remotely update system firmware.
- **Remote Shutdown/Reboot:** Remotely shutdown or reboot the NVR.

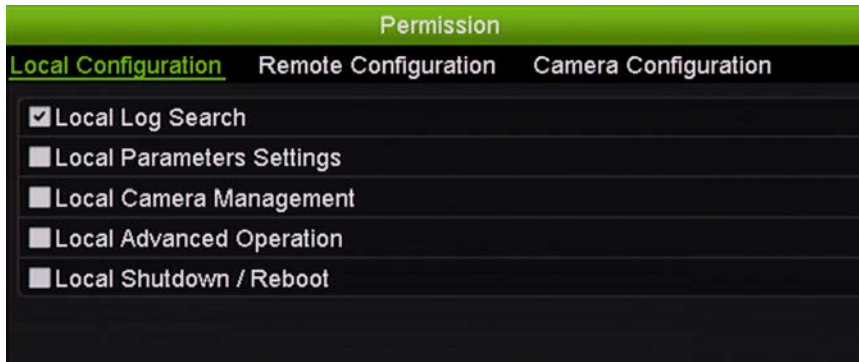
### Camera configuration settings:

By default, all IP cameras are enabled for operators for each of these settings and guests have Local Playback and Remote Playback privileges by default.

- **Local Live View:** Locally select and view live video.
- **Local Playback:** Locally play recorded files that are on the NVR.
- **Local Manual Operation:** Locally start/stop manual recording on any of the channels, snapshots, and video clips.
- **Local PTZ Control:** Locally control PTZ dome cameras.
- **Local Video Export:** Locally back up recorded files from any of the channels.
- **Remote Live View:** Remotely select and view live video over the network.
- **Remote Playback:** Remotely play and download recorded files that are on the NVR.
- **Remote Manual Operation:** Remotely start/stop manual recording on any of the channels.
- **Remote PTZ Control:** Remotely control PTZ dome cameras.
- **Remote Video Export:** Remotely backup recorded files from any channel.

### To customize a user's access privileges:

1. From the menu toolbar, click **User Management**.
2. For the user whose access privileges need to be changed, click the Permission button . The Permission pop-up window appears.




3. Select the desired options for local configuration, remote configuration, and camera configuration.
4. Click **Apply** to save the settings.
5. Click the **OK** button to return to the previous window.
6. Click **Back** to return to live view.

## Deleting a user

Only a system administrator can delete a user.


### To delete a user from the NVR:

1. From the menu toolbar, click **User Management**.
2. To delete the user, click the **Delete** button .
3. Click **Yes** in the pop-up window to confirm deletion. The user is immediately deleted.
4. Click **Back** to return to live view.

## Modifying a user

A user's name, password, access level and MAC address can be changed. Only a system administrator can modify a user.

### To modify a user:

1. From the menu toolbar, click **User Management**.
2. To change the information on a user, click the **Edit** button . The Edit User pop-up window appears.
3. Edit the user information and click **Apply** to save the settings.
4. Click the **OK** button to return to the previous window.
5. Click **Back** to return to live view.

## Changing the Admin password

The administrator's password can be changed in the **User Management** menu. Click the **Change Password** tab and enter the new information. The administrator's MAC address can be changed here too. Once completed, click **Apply** to save the settings.

# Chapter 16

## Using the web browser

This chapter describes how you can use the web browser interface to configure the device, play back recorded video, search through event logs, and control a PTZ dome camera. You can also specify settings on the web browser interface to optimize video playback and recording performance when operating in a low or limited bandwidth environment.

### Windows Vista and 7 users

Internet Explorer for Windows Vista and Windows 7 operating systems have increased security measures to protect your PC from any malicious software being installed. When using the NVR web browser interface, you can install ActiveX controls to connect and view video using Internet Explorer.

To have complete functionality of the web browser interface and the NVR player with Windows Vista and Windows 7, do the following:

- Run the Browser interface and the NVR player application as an administrator in your workstation
- Add the NVR's IP address to your browser's list of trusted sites

#### **To add the NVR's IP address to Internet Explorer's list of trusted sites:**

1. Open Internet Explorer.
2. Click **Tools**, and then **Internet Options**.
3. Click the Security tab, and then select the Trusted Sites icon.
4. Click **Sites**.
5. Clear the "Require server verification (https:) for all sites in this zone" box.
6. Enter the IP address or DDNS name in the "Add this website to the zone" field.
7. Click **Add**, and then click **Close**.
8. Click **OK** in the Internet Options dialog window.
9. Connect to the TVN 10 for full browser functionality.



## Accessing the web browser

To access the TVN 10, open a web browser and enter the IP address assigned to the TVN 10, as a web address. On the logon window, enter the default user ID and password.

**Note:** Only one NVR can be viewed per browser.

User ID: admin

Password: 1234

The default values for TVN 10 network settings are:

- IP address - 192.168.1.82
- Subnet mask - 255.255.255.0
- Gateway address - 192.168.1.1
- Ports:

When using the browser:

RTSP port: 554

HTTP port: 80

When using TruNav:

RTSP port: 554

Server/Client software port: 8000

For more information on port forwarding, see

# Web browser overview










The NVR web browser lets you view, record, and play back videos as well as manage all aspects of the NVR from any PC with Internet access. The browser’s easy-to-use controls give you quick access to all TVN 10 functions. See Figure 32 below.

Figure 32: Live view in the web browser interface



Table 18: Description of live view in the web browser

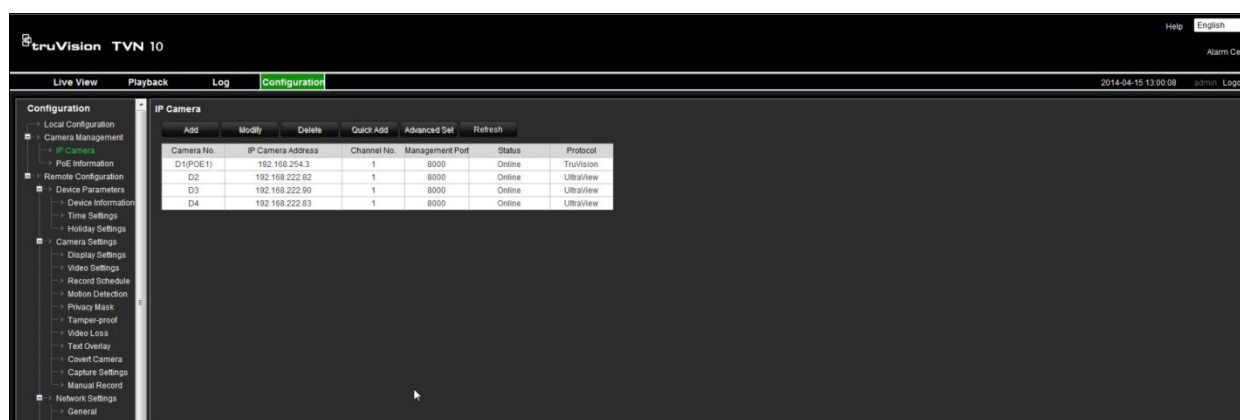
Item	Name	Description
1.	Camera	View video and record video from the selected camera.
2.	Menu toolbar	Lets you do the following: <ul style="list-style-type: none"><li>• View live video</li><li>• Play back video</li><li>• Search for event logs</li><li>• Configure settings</li><li>• Log out of the interface</li></ul>
3.	Viewer	View live or playback video.
4.	Display format	Define how you want video to be displayed in the viewer: Multiview or full screen.

Item	Name	Description
5.	Video function toolbar	<p>Lets you do the following in live view:</p> <div>  Switch between mainstream and substream. </div> <div>  Start/stop all viewing from selected cameras. </div> <div>  Start/stop recording from selected cameras. </div> <div>  Digital zoom. </div> <div>  Take a video snapshot. </div> <div>  View previous camera. If viewing in multiview format, live view moves to the previous group of cameras for the selected number of video tiles. </div> <div>  View next camera. If viewing in multiview format, live view moves to the next group of cameras for the selected number of video tiles. </div> <div>  Turn audio on/off </div> <div>  Turn microphone on/off </div>
6.	PTZ panel	Hide/display the PTZ panel.

## Using the web browser to configure the device

Click **Configuration** on the browser menu bar to display the configuration window. There are two ways to configure the NVR: Local and Remote. See Figure 33 below for an example of the Configuration window.

Figure 33: Configuration window for camera management



## Local configuration

Local configuration lets you define communication and network parameters such as protocol type, maximum file size, stream type and network transmission settings. You can also specify the directory locations for saving recorded and playback video, captured images, and downloaded files.

## Camera management

You can add, modify, and delete IP cameras as well as add cameras from the external (LAN) network. See Figure 33 on page 121.

Select “PoE Information” to get information on the PoE power consumption. See “PoE power budget” on page 70 for more information on this function.

## Remote configuration

See Table 19 below for an overview of the remote configuration menu functions. Please refer to the specific sections on the OSD menu functions for more information on configuring these functions.

**Note:** The configuration settings defined remotely are different from those that can be defined locally.

**Table 19: Description of remote configuration menus**

Menu	Function	Description
Device Parameters	Device Information	<b>Device name:</b> Define the NVR name. The default name is TVN 10.  <b>Device no.:</b> The device number to use for the NVR when programming the remote control. The default value is 255.
	Time Settings	Define time and date. See “Configuring time and date” on page 81 for more information. See “NTP server” on page 49 for information on setting up NTP time settings.
	Holiday Settings	Define how recordings occur during holiday periods. See “Holiday schedules” on page 32 for more information.
Camera Settings	Display Settings	Define which information is displayed on-screen. See “Configuring the camera OSD settings” on page 66 for more information.
	Video Settings	Define general recording settings. See “Configuring recording schedules” on page 30 for more information.
	Record Schedule	Define the recording schedules. See “Configuring recording schedules” on page 30 for more information.
	Motion Detection	Define motion detection parameters. See “Setting up motion detection” on page 38 for more information.
	Privacy Mask	Define the on-screen privacy mask areas. See “Setting up privacy masking” on page 67 for more information.

Menu	Function	Description
	Tamper Mask	Define the video tampering detection settings. See “Detecting video tampering” on page 44 for more information.
	Video Loss	Define the video loss detection settings. See “Detecting video loss” on page 43 for more information.
	Text Overlay	Add extra lines of text on screen. See “Text overlay” on page 126.
	Restricted Access Camera	Define the cameras whose images cannot be displayed by those not logged in. See “Hiding a camera image from view” on page 69 for more information.
	Capture Settings	Define the resolution and image quality of snapshots.
	Manual Record	Define which cameras can manually record. See “Manual recording” on page 33 for more information.
Network Settings	General	Define the general network settings. See “General network settings” on page 46 for more information.
	PPPoE	Define the PPPoE settings. See “PPPoE” on page 47 for more information.
	DDNS	Define the DDNS settings. See “DDNS” on page 48 for more information.
	Email	Define the settings to send an email. See “Email” on page 50 for more information.
	UPnP	Enable this function so that the NVR can automatically configure its own port forwarding. See “UPnP” on page 51 for more information.
	SNMP	Define the SNMP settings. See “SNMP” on page 51 for more information.
	FTP	Define the FTP settings. See “FTP server setup to store snapshots” on page 51 for more information.
	More Settings	Define a remote alarm host, multicast IP as well as the server, HTTP, and RTSP ports. See page 52 for more information.
Alarm Settings	Alarm Input	Define the alarm input parameters for when an external alarm is triggered. See “Setting up external alarms” on page 41 for more information.
	Alarm Output	Define the response when an external alarm is triggered. See “Setting up external alarms” on page 41 for more information.
	Advanced Settings	Define the warning buzzer time. See “Modifying the warning buzzer” on page 37 for more information.
Notification		Define the notification parameters when irregular events occur such as HDD full. See “Description of alarm notification types” on page 37 and “Setting up system notifications” on page 40
User Management		Define, modify, and delete users. See Chapter 15 “User management” on page 113 for more information.

Menu	Function	Description
HDD Management	Basic Settings	Define the HDD basic settings and Initialize the HDD. See “Initializing HDDs” on page 57 for more information.
	Storage Mode	Define the storage mode of the HDD. See “Controlling disk storage mode on the HDD” on page 57 for more information.
	S.M.A.R.T. Settings	List the S.M.A.R.T. information on the HDD.
Maintenance		Remotely update the NVR firmware, restore default factory settings, restart the NVR, and import/export parameters remotely. See Chapter 14 “NVR management” on page 108 “NVR management” on page 108 for more information.
System Information	Camera, Record, Alarm, and Network	Review the status of the cameras, recordings, alarms, and network. See “Viewing system information” on page 109 for more information.















## Searching and playing back recorded video

To search and play back recorded video, click Playback on the menu bar to display the Playback window shown in Figure 34 below.

Figure 34: Browser playback window



Item	Description
1.	Selected camera.
2.	<b>Multiview:</b> Select the desired multiview format.
3.	<b>Calendar:</b> Selected day is highlighted.
4.	<b>Search:</b> Click to start searching recorded files for the selected camera.

Item	Description
5.	<b>Player Download:</b> Click to download the Player application required to play back recordings.
6.	<b>Timeline:</b> The timeline moves from left (oldest video) to right (newest video). Click a location on the timeline to move the cursor to where you want playback to start.
7.	<b>Playback control toolbar:</b>
	 <b>Reverse:</b> Click to reverse playback.
	 <b>Play/pause:</b> Play or pause playback.
	 <b>Stop playback.</b> Playback is stopped and the window changes to black.
	 <b>Playback reverse:</b> Click to scroll through the different speeds available: 1/8 speed, 1/4 speed, 1/2 speed, normal, X2 speed, X4 speed, and X8 speed. Current speed is displayed under the camera name on top right of window.
	 <b>Playback forward:</b> Click to scroll through the different speeds available: 1/8 speed, 1/4 speed, 1/2 speed, normal, X2 speed, X4 speed, and X8 speed. Current speed is displayed under the camera name on top right of window.
	 <b>Single frame:</b> Click to play back one frame at a time.
8.	 <b>Stop all playback:</b> Click to stop all cameras in playback.
9.	<b>Audio and video control toolbar:</b>
	 <b>Digital Zoom:</b> Access digital zoom.
	 <b>Capture:</b> Capture a snapshot of the video.
	 <b>Start/stop Clipping:</b> Start/stop video clip during playback. Sections of a recording are saved to a local computer folder.
	 <b>Download:</b> Download video clips.
	 <b>Backup:</b> Click to make back up of recorded files to save locally on the NVR. A list of the recorded files appears
	 <b>Audio On/Off:</b> Click to enable/disable audio.
	 <b>Bookmark Management:</b> Manage bookmarks.
10.	<b>Recording type:</b> Description of the color coding of recording types that appear in the playback progress bar. Green indicates continuous recording. Red indicates alarm/event recording. Yellow indicates motion recording. Pale green indicates manual recording.
11.	<b>Digital Zoom:</b> Zoom in and out of the selected camera image.
12.	<b>Jump start:</b> Enter a precise time in the box and click the Go To button to jump start the playback from this selected time.

Select a camera and a day to search from on the calendar displayed, and then click Search. The timeline below the page indicates video recorded for the specified day. The timeline also classifies by color the type of recording.

Click and drag the marker across the timeline on where you want video playback to begin, and then click Play on the playback control toolbar. You can capture a snapshot of a video image, save the video clips, or download the recorded video.

## Searching for event logs

The NVR compiles a log of events, such as the start or end of video recording, NVR notifications, and alarms, through which you can easily search. Logs are categorized by the following types:

- **Alarm:** Includes motion detection, tamper detection, and other alarm events
- **Notifications:** Includes system notifications such as video loss, HDD failures, and other system-related events
- **Operations:** Includes users access to the web interfaces and other operational events
- **Information:** Includes general information on the NVR actions, such as the start and end of video recording, etc.

To search for logs, click **Log** on the menu bar, select a log type, specify a date and time range, and then click Search.

## Text overlay

You can add up to four lines of text on-screen via the browser. This option can be used, for example, to display emergency contact details. By default these lines of text are positioned along the top of the window. The strings follow each other consecutively.

**Note:** This option is not available via the NVR.

### To add on-screen overlay text:

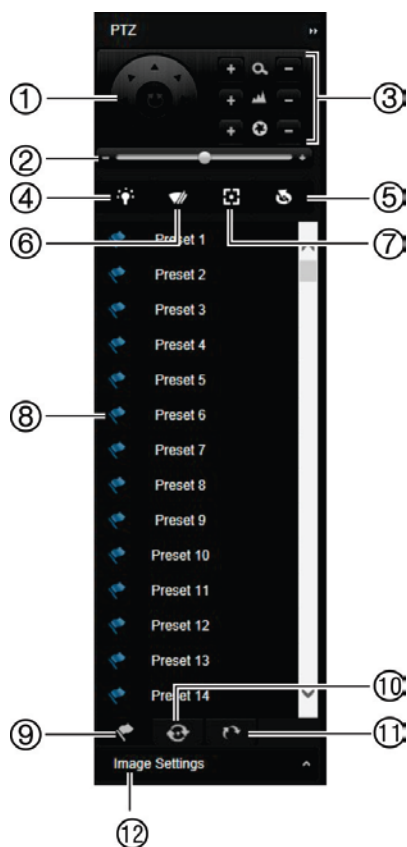
1. In the browser toolbar, click the **Configuration > Camera Settings > Text Overlay**.
2. Select the desired camera.
3. Check the string box **1** for the first line of text.
4. Enter the text for string 1 in the column alongside. Up to 44 alphanumeric characters can be used.
5. Repeat steps 3 and 4 for each extra line of text, selecting the next string number.
6. Click **Save**.

## Controlling a PTZ dome camera

The web browser interface lets you control the PTZ functions of a dome camera. Select a PTZ dome camera and use the PTZ controls on the browser interface to control the PTZ functions. See Figure 35 on page 127.



**Figure 35: PTZ controls**



1. Directional pad/auto-scan buttons: Controls the movements and directions of the PTZ. Center button is used to start auto-pan by the PTZ dome camera.
2. Adjust speed of PTZ dome camera.
3. Adjust zoom, focus, and iris.
4. Turn on or off the camera light (if available on the camera).
5. Lens initialization: Initialize the lens of a camera with a motorized lens, such as PTZ or IP cameras. This function helps to maintain lens focus accuracy over prolonged periods of time.
6. Start or stop camera wiper (if available on the camera).
7. Auxiliary focus: Automatically focus the camera lens for the sharpest picture.
8. Start selected preset/tour/shadow tour (depending on function selected).
9. List presets available.
10. List preset tours available.
11. List shadow tours available.
12. Modify brightness, contrast, saturation, and hue values.

# Appendix A

## Specifications

	TVN 10	TVN 10c
Video & audio input		
IP camera input	8-ch / 16-ch	4-ch
Video compression	H.264, MJEG, MPEG-4	
Total bandwidth available	40/80 Mbps in	20 Mbps in
Maximum bandwidth per channel	16 Mbps	16 Mbps
Average bandwidth per channel	5 Mbps	5 Mbps
Bi-directional audio	1-ch, RCA (2.0 Vp-p, 1 kΩ)	
Viewing		
OSD viewing resolutions	1920 × 1080P / 60 Hz, 1600 × 1200 / 60 Hz, 1280 × 1024 / 60 Hz, 1280 × 720 / 60 Hz, 1024 × 768 / 60 Hz	
Remote viewing resolutions	Up to 5 MPX - depending on remote client capabilities	
HDMI & VGA output resolutions	1920 × 1080P / 60 Hz, 1600 × 1200 / 60 Hz, 1280 × 1024 / 60 Hz, 1280 × 720 / 60 Hz, 1024 × 768 / 60 Hz	
HDMI version	1.4	
Digital zoom	Up to 16X	
Playback		
Playback resolution	Up to 5 MPX	
Synchronous playback OSD	Up to 8-ch	
Synchronous playback web browser	Up to 4-ch	
Reverse playback OSD	Up to 1-ch	
Reverse playback browser	Up to 4-ch	
Recording		
Recording resolution	5MPX / 3MPX / Full HD 1080p, UXGA / HD 720p / VGA / 4CIF / DCIF / 2CIF / CIF / QCIF	
Internal SATA slots	2	1
Maximum capacity supported	4/6 TB	2 TB
Capacity per SATA drive	2/3 TB	1/2 TB

	TVN 10	TVN 10c
Recording modes	Time lapse High, Time lapse Low, Event, Alarm, Manual	
External storage	-	
Networking		
Network interface	1 RJ-45 10/100/1000 Mbps self-adaptive Ethernet interface	
ezDDNS	Yes	
DDNS	Yes	
Total viewing bandwidth available	80/80 Mbps out	40 Mbps out
Total viewing streams available	16/16 out	8 out
External Interface		
IP camera interface	8 PoE IP camera ports (optional)	4 PoE IP camera ports (optional)
PoE support	PoE-af / PoE-at	
PoE budget	Max. 120 W	Max. 52 W
Plug-&-Play functionality	Yes. Supported cameras only	
Serial interface	-	
USB interface	1 x USB 2.0 (front), 1 x USB 3.0 (back)	
Alarm interface	4 alarm in, 1 alarm out	
General		
Power supply	PoE Model: AC 100 to 240 VAC Non-PoE Model: 12 VDC	PoE Model: 48 VDC Non-PoE Model: 12 VDC
Power consumption (without HDD)	PoE Model: 180 W Non-PoE Model: 10 W	PoE Model: 65 W Non-PoE Model: 10 W
Operating temperature	-10 to +55 °C (14 to 131 °F)	
Relative humidity	10 to 90%	
Chassis	1.5U desk-based chassis	1U desk-based chassis
Dimensions (W x D x H)	Without front panel: 362 × 305 × 79 mm (14.25 × 12 × 3.11 in.)  With front panel: 362 × 332 × 79 mm (14.25 × 13.07 × 3.11 in.)	Without front panel: 315 × 213 × 47 mm (12.4 × 8.4 × 3.11 in.)  With front panel: 315 × 236.5 × 47 mm (12.4 × 9.3 × 3.11 in.)
Weight (without HDD)	≤ 8 kg (17.64 lb.)	
Operations		
Local	On screen display - VGA or HDMI	
Remote	Browser interface / TruVision Navigator / TVRmobile	
Browser requirements	IE 8, 9, 10, 11	
Software	TruVision Navigator 5.0 SP2 or later	
Mobile applications	TVRmobile 2.0 or later	
Integrated solutions	Advisor, OnGuard (planned), TruPortal (planned), MasterMind	

	TVN 10	TVN 10c
<b>Supported devices</b>		
Interlogix IP cameras	Consult IP camera compatibility chart	
Interlogix IP encoders	TVE-400, TVE-800, TVE-1600	
Third party IP cameras	Onvif	

# Appendix B

## Port forwarding information

A router is a device that lets you share your internet connection between multiple computers. Most routers will not allow incoming traffic to the device unless you have configured them to forward the necessary ports to that device. By default our software and devices (DVRs and NVRs) require the following ports to be forwarded:

**Note:** Port forwarding may reduce the security of the computers on your network. Please contact your network administrator or a qualified network technician for further information.

**Table 20: Description of the ports**

Port	Port name	Description
80	HTTP protocol	Used to connect via IE browser.
8000	Client Software Port	Used to connect to video streams.
554	RTSP Port	Real time streaming protocol. Used to record video remotely.
1024	RTSP Port for 3G/4G	Use with mobile apps. Used for 3G/4G connection.

**Note:** It is recommended that the RTSP port 1024 should only be used when experiencing connection issues over a 3G/4G connection.

### Seeking further assistance

Third-party assistance on configuring popular routers can be found at:

<http://www.portforward.com/>

<http://canyouseeme.org/>

<http://yougetsignal.com>

**Note:** These links are not affiliated with nor supported by Interlogix technical support.

Many router manufacturers also offer guides on their websites as well as including documentation with the product.

On most routers the brand and model number is located on or near the serial number sticker on the bottom of the device.

If you cannot find any information for your particular router, please contact your router manufacturer or internet service provider for further assistance.

# Appendix C

## Maximum pre-recorded times

The maximum pre-recording time that can be selected depends on the bit rate. Frame rate, resolution and image quality do not impact time.

**Note:** This information only applies when the bit rate is set to Constant (see “Configuring recording settings” on page 27 for more information).

Constant bit rate	Maximum pre-recording time (seconds)
32	30
48	30
64	30
80	30
96	30
128	30
160	30
192	30
224	30
256	30
320	30
384	30
448	30
512	30
640	30
768	30
896	30
1024	30
1280	25

Constant bit rate	Maximum pre-recording time (seconds)
1536	20
1792	15
2048	15
3072	10
4096	5

.



# Appendix D

## Default menu settings

<b>Display Mode Setting</b>			
	Monitor		
		General	
			Language: English
			Device Name: TVN 10
			Device Address: 255
			Resolution: 1280*1024/60HZ
			Password Required : Yes
			Enable Wizard: Yes
			Display Status Icons: Yes
		More Settings	
			Output Mode: Standard
			Event Hint: Yes
			Time Bar Transparent: Yes
			Enable Time Bar: Yes
			Menu Timeout: 5 min
			Mouse Pointer Speed: Lower
			Instant Playback Time: 5 minutes
			Enable Logout Lock: No
	Layout		
		General	
			Video Output Interface: VGA/HDMI
			Window Segmentation: 1*1
			Dwell Time: No Switch
			Enable Audio Output: No
			Event Output: VGA/HDMI
			Event Full-Screen Monitoring Dwell Time: 10 s
			Alarm Full-Screen Monitoring Dwell Time: 10 s

View	
	Video Output Interface: VGA/HDMI
	4 Chan: 1*1 -D1, 8-16 Chan: 1*1 -D1, 4-8-16 Chan: 1*1 -D1
Time	
	DST Settings
	Time Zone: GMT -8
	Date Format: MM-DD-YYYY
	Time Format: 24-hour
	Display Week: No
	System Date: Current System Date
	System Time: Current System Time
	Auto DST Adjustment: No
	Enable DST: No
	From: Apr 1st Sun 2:00
	To: Oct last Sun 2:00
	DST Bias: 60 minutes
Holiday	
	Holiday Settings
	Status: All Disabled; Start Date: 1st. Jan; End Date: 1st Jan
<b>Camera Management</b>	
Camera	
	IP Camera
	IP Camera No.: IP Camera 1
	IP Camera Address/Domain: (Null)
	Protocol: TruVision
	Management Port: 8000
	User Name: admin
	Password: (Null)
	Added IP Cameras: (Null)
	PoE Setup
	(Null)
OSD	
	OSD Settings
	Camera: IP Camera 1
	Camera Name: IPCamera 01
	Display Name: Yes
	Display Date: Yes
	Display Week: Yes

		Date Format: MM-DD-YYYY
		Time Format: 24-hour
		Display Mode: Not transparent & Not Flashing
Image		
	Image Settings	
		Camera: IP Camera 1
		Mode: Custom
		Brightness: 128
		Contrast: 128
		Saturation: 128
		Hue: 128
Motion		
	Motion Detection	
		Camera: IP Camera 1
		Enable Motion Detection: No
		Rule: Trigger Channel [enabled]; Arming Schedule: [All day for whole week]; Rule [All disabled]
		Sensitivity:
Privacy Mask		
	Privacy Mask Settings	
		Camera: IP Camera 1
		Enable Privacy Mask: No
		Zone: (Null)
Tamper Mask		
	Tamper Mask Settings	
		Camera: IP Camera 1
		Enable Tamper Mask: No
		Rule: Arming Schedule [All day for whole week]; Rule [All disabled]
		Sensitivity: Low
		Zone: (Null)
Video Loss		
	Video Loss Settings	
		Camera: IP Camera 1
		Enable Video Loss Alarm: No
		Rule: Arming schedule [All day for whole week]; Rule: (Null)

Restricted Access Camera		
	Restricted Access Camera Settings	
	Camera: No	
Video Schedule		
	Schedule	
	Record	
	Camera: IP Camera 1	
	Enable Schedule: Yes	
	Schedule: All day for whole week TL-Hi	
Encoding		
	Record	
	Camera: IP Camera 1	
	Encoding Parameters: Main Stream (TL-Hi)	
	Stream Type: Video	
	Resolution: 1280*720 (HD720P)	
	Bitrate Type: Variable	
	Video Quality: Highest	
	Frame Rate: 30 fps or 25 fps	
	Max. Bit Rate Mode: General	
	Max. Bit Rate (Kbps): 4096	
	Pre-record: 15 s	
	Post-record: 15 s	
	Auto Delete (day): 0	
	Record Audio: No	
	Capture	
	Camera: IP Camera 1	
	Resolution: AUTO	
	Snapshot Quality: High	
Manual Recording		
	Manual Recording	
	Off: All	
More Settings		
	More Settings	
	Overwrite: Yes	

Networking Settings			
General			
General			
		NIC Type: 10M/100M/1000M Self-adaptive	
		Enable DHCP: No	
		IPv4 Address: 192.168.1.82	
		IPv4 Subnet Mask: 255.255.255.0	
		IPv4 Default Gateway: 192.168.1.1	
		IPv6 Address1: (It depends)	
		IPv6 Address2: (Null)	
		IPv6 Default Gateway: (Null)	
		Mac Address: (It depends)	
		MTU (Bytes): 1500	
		Preferred DNS Server: (Null)	
		Alternate DNS Server: (Null)	
		Internal NIC IP v4 Address: 192.168.254.1	
PPPOE			
PPPOE			
		Enable PPPoE: No	
		User Name: (Null)	
		Password: (Null)	
DDNS			
DDNS			
		Enable DDNS: No	
		DDNS Type: ezDDNS	
		Server Address: www.tvr-ddns.net	
		Host Name: (Null)	
NTP			
NTP			
		Enable NTP: No	
		Interval (min): 60	
		NTP Server: time.nist.gov	
		NTP Port:123	

Email		
	Email	
		Enable Server Authentication: No
		User Name: (Null)
		Password: (Null)
		SMTP Server: (Null)
		SMTP Port: 25
		Enable SSL: No
		Sender: (Null)
		Sender's Address: (Null)
		Select Receiver: Receiver 1
		Receiver Name: (Null)
		Receiver's Address: (Null)
		Enable Attached Snapshot: No
		Interval: 2 s
FTP		
	FTP	
		Enable FTP: No
		FTP Server: (Null)
		FTP Port: 21
		User Name: (Null)
		Password: (Null)
		Directory: Use root directory
		Parent Directory:
		Secondary Directory:
SNMP		
	SNMP	
		Enable SNMP: No
		SNMP Version: V2
		SNMP Port: 161
		Read Community: public
		Write Community: private
		Trap Address: (Null)
		Trap Port: 162

UPnP	
UPnP	Enable UPnP: No Mapped Type: Manual Port Type: HTTP Port; RTSP Port ; Server Port
More Settings	
More Settings	Alarm Host 1 IP: (Null) Alarm Host 1 Port: 5001 Alarm Host 2 IP: (Null) Alarm Host 2 Port: 5002 Alarm Host 3 IP: (Null) Alarm Host 3 Port: 5003 Server Port: 8000 HTTP Port: 80 Multicast IP: (Null) RTSP Server Port: 554 Enable Telnet: No
Alarm Settings	
Alarm List	Alarm Status Alarm Input List: Alarm Input No.; Alarm Name; Alarm Type Alarm Status Alarm Output List: AlarmOutput No.; Alarm Name; Time Out
Alarm Input	Alarm Input Alarm Input No.: A<-1 Alarm Name: (Null) Type: NO Enable: No Rule: Trigger Channel: [No]; Arming Schedule: [All day for whole week]; Rule: (All disabled); PTZ linking: (Null)
Alarm Output	Alarm Output Alarm Output No.: A>1 Alarm Name: (Null) Time Out: 5 s Rule: All day for whole week

Manual Alarm	
	Trigger none
Notification	
Notification	
	Notification Type: HDD Full
	Audible Warning: No
	Notify Alarm Recipient: No
	Send Email: No
	Trigger Alarm Output: No
Advanced Settings	
Advanced Settings	
	System Buzzer Time: Constant
	Camera Buzzer Time: Constant
PTZ Settings	
PTZ	
General	
	Camera: IP Camera 1
	Save Preset: (Null)
	Call Preset: (Null)
	Shadow Tour: (Null)
	Preset Tour: (Null)
User Settings	
User	
User Management	
	admin:1234
	operator: 4321
	guest: (Null)
Change Password	
	(Null)
System Settings	
HDD	
HDD Information: (Null)	
Storage Mode	
	Mode: Quota
	Camera: IP Camera 1
	Used Record Capacity:
	Used Snapshot Capacity:
	HDD Capacity (GB):



	Max Record Capacity (GB):
	Max Snapshot Capacity (GB):
S.M.A.R.T.	
	Use when the disk has failed to self-evaluate: No
	HDD No.:
	Self-test Status: Not Tested
	Self-test Type: Short Test
	S.M.A.R.T.:
	Temperature (°C):
	Power Up (days):
	Self-evaluation:
	All-evaluation: Functional
	S.M.A.R.T. Information : ID ; Attribute Name ; Status ; Flags ; Threshold ; Value ; Worst ; Raw Value
Bad Sector Detection	
	HDD No.: (Null)
	HDD Capacity: (Null)
	Block Capacity: (Null)
	Status: (Null)
	Error Count: (Null)
Upgrade	
	Local Upgrade
	FTP
Configurations	
	Import/Export Config File
	Default
Log Search	
	Log Search
	Current whole day, all types
System Information	
	Device Name: TVN 10
	Model: (Model number)
	Serial No.: (Model's serial number)
	Firmware Version:
	Encoding Version:

Net Detect	
Traffic	
Network Detection	
Network Delay, Packet Loss Test	
Select NIC: LAN1	
Destination Address: (Null)	
Network Packet Archive	
Device Name: (Null)	
Network Stat	
IP Camera: (Null)	
Remote Live View: (Null)	
Remote Playback: (Null)	
Net Receive Idle: (Null)	
Net Send Idle: (Null)	
Send Bandwidth Limit: 40Mbps/80Mbps	

# Appendix E

## Product codes

This is the TruVision™ NVR 10 (TVN 10) User Manual for the models listed below:

**Table 1: Product codes**

TVN-1004c-1T	TruVision NVR 10, 4 channels, 20 Mbps, 1TB
TVN-1004c-2T	TruVision NVR 10, 4 channels, 20 Mbps, 2TB
TVN-1004cS-1T	TruVision NVR 10, 4 channels, 4 channel PoE switch, 20 Mbps, 1TB
TVN-1004cS-2T	TruVision NVR 10, 4 channels, 4 channel PoE switch, 20 Mbps, 2TB
TVN-1008-2T	TruVision NVR 10, 8 channels, 40 Mbps, 2TB
TVN-1008-4T	TruVision NVR 10, 8 channels, 40 Mbps, 4TB
TVN-1008S-2T	TruVision NVR 10, 8 channels, 8 channel PoE switch, 40 Mbps, 2TB
TVN-1008S-4T	TruVision NVR 10, 8 channels, 8 channel PoE switch, 40 Mbps, 4TB
TVN-1016-3T	TruVision NVR 10, 16 channels, 80 Mbps, 3TB
TVN-1016-6T	TruVision NVR 10, 16 channels, 80 Mbps, 6TB
TVN-1016S-3T	TruVision NVR 10, 16 channels, 8 channel PoE switch, 80 Mbps, 3TB
TVN-1016S-6T	TruVision NVR 10, 16 channels, 8 channel PoE switch, 80 Mbps, 6TB

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